



This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

- + *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.
- + *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.
- + *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.
- + *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at <http://books.google.com/>

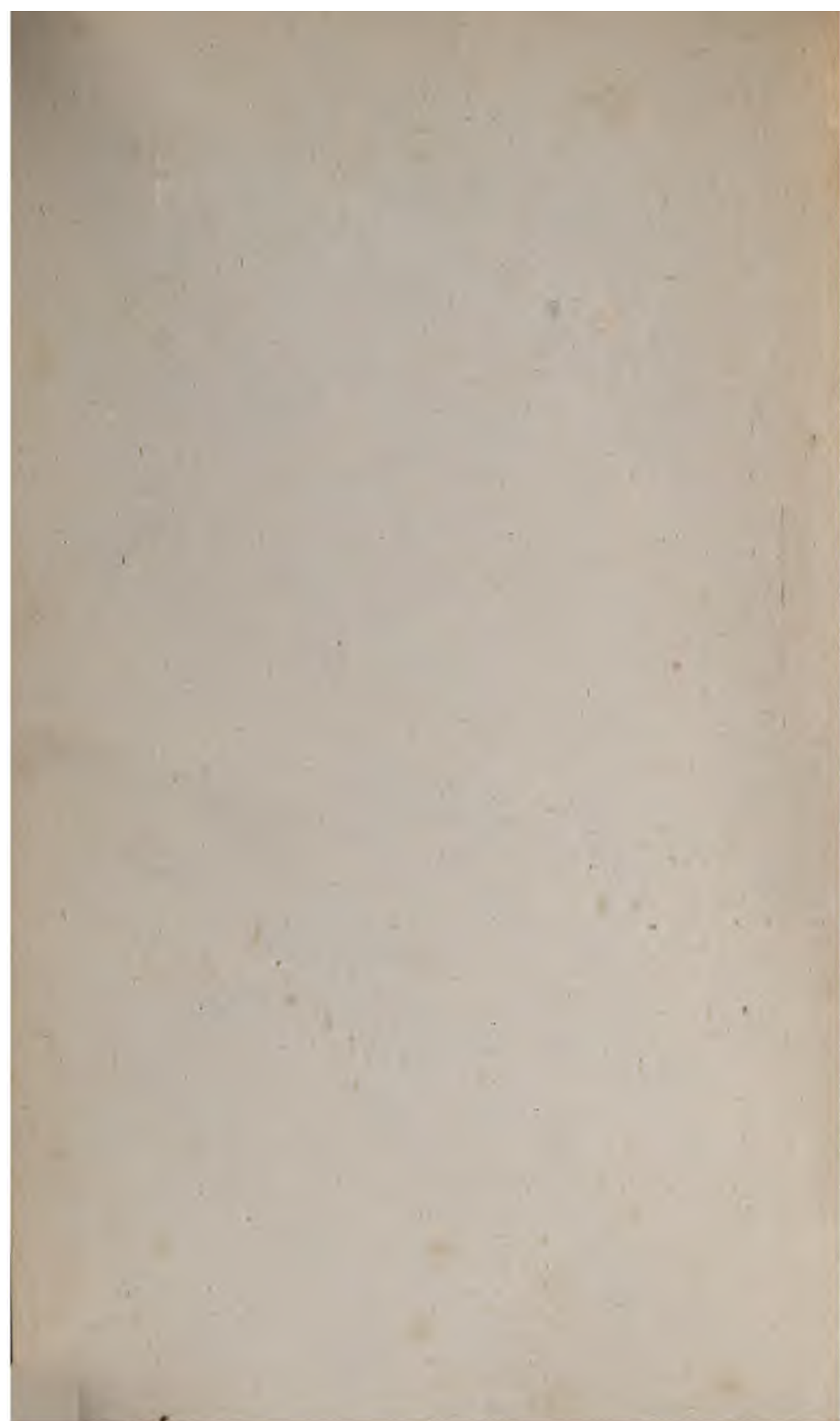
LANE MEDICAL LIBRARY STANFORD
N45 .Q67 1881
A practical treatise on impotence, steri



24503431996

For *From Dr. Neal*
Directions, *Aug 29 1903*
DR. W. F. LYNCH,
ELMHURST, CALIFORNIA.





A PRACTICAL TREATISE
ON
IMPOTENCE, STERILITY,
AND
ALLIED DISORDERS
OF THE
MALE SEXUAL ORGANS.

BY
SAMUEL W. GROSS, A.M., M.D.,
LECTURER ON VENEREAL AND GENITO-URINARY DISEASES IN THE JEFFERSON MEDICAL COLLEGE
OF PHILADELPHIA; SURGEON TO, AND LECTURER ON CLINICAL SURGERY IN, THE JEFFERSON
MEDICAL COLLEGE HOSPITAL AND THE PHILADELPHIA HOSPITAL; PRESIDENT OF THE
PATHOLOGICAL SOCIETY OF PHILADELPHIA; AUTHOR OF A PRACTICAL TREATISE
ON TUMORS OF THE MAMMARY GLAND; FELLOW OF, AND FORMERLY MASTER
LECTURER ON SURGICAL PATHOLOGY IN, THE COLLEGE OF PHYSICIANS
OF PHILADELPHIA; FELLOW OF THE ACADEMY OF SURGERY OF
PHILADELPHIA, ETC.

WITH SIXTEEN ILLUSTRATIONS.



PHILADELPHIA:
HENRY C. LEA'S SON & CO.
1881.

AP

Large Library

Entered according to Act of Congress, in the year 1881, by
HENRY C. LEA'S SON & CO.,
in the Office of the Librarian of Congress, at Washington.

COLLINS, PRINTER.

Y9A9B11 39A1

748
G87
1881

PREFACE.

OF the affections discussed in this brochure at least two—Impotence and Spermatorrhœa—are commonly described as functional diseases of the testicles; while, according to my observations, they usually depend upon reflex disturbances of the genito-spinal centre, and are almost invariably induced or maintained by appreciable lesions of the prostatic portion of the urethra, which, as they may not be perceived by the patient, are frequently overlooked by the physician. A more extended knowledge of these pathological facts, it is hoped, will afford a more rational and simple basis for treatment.

My aim has been to supply in a compact form practical and strictly scientific information, especially adapted to the wants of the general practitioner, in regard to a class of common and grave disorders, upon the correction of which so much of human happiness depends. In the chapter on Sterility, the abnormal conditions of the semen and the causes which deprive it of its fecundating properties are fully considered—a portion of the work intended to supplement the subject of sterility in the female. From answers to letters addressed to many of the most prominent writers in this country on gynecology, I find that, with few exceptions, the woman alone commands attention in unfruitful marriages. The importance of examining the husband before subjecting the wife to operation will be best appreciated when I state that he is, as a rule, at fault in at least one instance in every six.

S. W. GROSS.

PHILADELPHIA,
1112 Walnut Street, July, 1881.

53974

CONTENTS.

CHAPTER I.

IMPOTENCE.

| | PAGE |
|---|-------|
| SECT. I.—General observations—Mechanism of erection. | 17-20 |
| SECT. II.—Atonic impotence. | |
| A. Atonic impotence from hyperæsthesia and inflammation of the prostatic urethra—Etiology—Local effects of masturbation—Masturbation a cause of stricture of the urethra—General effects of masturbation—Classification—Clinical history—Neurasthenia—Diagnosis—Prognosis—Local treatment—General treatment | 20-58 |
| B. Atonic impotence without hyperæsthesia of the prostatic urethra—Etiology—Treatment | 58-59 |
| SECT. III. Psychical impotence. | |
| Etiology—Prognosis—Treatment | 59-66 |
| SECT. IV. Symptomatic impotence. | |
| From the prolonged use of cerebral sedatives and cerebral excitants—From injuries of the brain and spinal cord—Prognosis—Treatment | 66-68 |
| SECT. V. Organic impotence. | |
| A. Impotence from abnormal conditions of the penis—From malformations of the penis—From variations in the size of the penis—From adhe- | |

| | PAGE |
|--|-------|
| sion of the penis to the scrotum—From distortion of the penis—From induration of the corpora cavernosa—From gummata of the corpora cavernosa—From calcification of the septum pectiniforme, or corpora cavernosa—From retention of a ball in the corpus cavernosum—From shortness of the frenum—From varix of the dorsal vein of the penis | 69-77 |
| B. Impotence from defects and disease of the testes—From cryptorchidism—From loss of the testes—From progressive atrophy of the testes—From syphilitic orchitis—From tumors and tubercle | 79-80 |

CHAPTER II.

STERILITY.

SECT. I. General observations.

| | |
|---|-------|
| Composition of the semen—Functions of the prostatic fluid—Spermatozoa—Spermatic crystals—Classification—Relative frequency in the two sexes | 81-88 |
|---|-------|

SECT. II. Azoospermism.

From bilateral anorchidism—From congenital bilateral deficiency of the epididymis and vas deferens—From affections of the testes—From bilateral atrophy of the testes—From parenchymatous orchitis and total disorganization of the substance of the testes—From syphilitic orchitis—From bilateral obliteration of the epididymis and vas deferens—From abnormal conditions of the semen—Sexual excesses a cause of infertile semen—Neurasthenia a cause of infertile semen—General diseases a cause of infertile semen—Abnormal density of the semen a cause of sterility.

CONTENTS.

vii

| | PAGE |
|--|---------|
| —Purulent semen a cause of sterility—Diagnosis | |
| —Watery semen—Colloid semen—Catarrhal semen—Prognosis—Treatment | 88-114 |
| SECT. III. Aspermatism. | |
| A. Organic aspermatism—From congenital occlusion, and deviation of the ejaculatory ducts—From stricture of the ejaculatory ducts, and deviation of their orifices—From obstruction of the ejaculatory canals by sympexions—From stricture of the urethra—From phimosis | 114-123 |
| B. Atonic aspermatism—Etiology | 123 |
| C. Anæsthetic aspermatism—Etiology | 125 |
| D. Psychical aspermatism—Etiology—Diagnosis of aspermatism—Prognosis—Treatment | 127 |
| SECT. IV. Misemission. | |
| From vices of conformation of the urethra—From malposition of the meatus—Treatment | 132 |

CHAPTER III.

SPERMATORRHŒA.

| | |
|--|-----|
| Classification—Nocturnal pollutions—Diurnal pollutions—Spermorrhagia—Clinical history—Etiology—Anatomical characters—Diagnosis—Prognosis—Treatment | 134 |
|--|-----|

CHAPTER IV.

PROSTATORRHŒA.

| | |
|--|-----|
| Etiology—Clinical history—Prostatic crystals—Pathological characters—Diagnosis—Prognosis—Treatment | 162 |
|--|-----|

LIST OF ILLUSTRATIONS.

| FIG. | PAGE |
|--|------|
| 1. Exploratory bulbous bougie | 38 |
| 2. Conical steel bougie | 44 |
| 3. Urethral dilator | 44 |
| 4. Urethrotome | 45 |
| 5. Syringe and perforated bulbous explorer | 47 |
| 6. Bulbous nozzle | 48 |
| 7. Catheter syringe | 48 |
| 8. Porte-caustique | 49 |
| 9. Cupped conical steel bougie | 49 |
| 10. Porte-remède | 49 |
| 11. Psychrophor | 56 |
| 12. Spermatozoa | 84 |
| 13. Spermatic crystals From Ultzmann | 84 |
| 14. Watery semen Ibid. | 108 |
| 15. Colloid semen Ibid. | 109 |
| 16. Prostatic crystals | 164 |

IMPOTENCE, STERILITY, AND ALLIED DISORDERS OF THE MALE SEXUAL ORGANS.

CHAPTER I.

IMPOTENCE.

SECT. I. GENERAL OBSERVATIONS.

IMPOTENCE, or inability to copulate or perform the sexual act, is one of the most common of the derangements of the generative functions, and is due either to deficiency or absence of erection, or to congenital or acquired abnormal conditions of the genital organs, which render intromission of the penis impracticable. Hence, men who are impotent are usually sterile, the power of procreating children being dependent upon that of having connection; but as sterility, in the strict acceptance of the term, implies non-ejaculation, or emission of infertile semen, it will be discussed in a separate chapter.

For a clear comprehension of the pathology of the most frequent forms of impotence, a knowledge of the mechanism of normal erection and of the nervous centres which preside over it is essential.

Erection consists in augmentation of the volume, in

stiffness, and in rigidity of the penis, and is due to an increased flow of blood into that organ, as has been experimentally demonstrated by Eckhard.¹ Lovén,² who extended the investigations of Eckhard, was, however, the first to show, in opposition to former theories, that the essential factor in the phenomenon is active dilatation of the arterioles of the cavernous and spongy bodies, and not merely a stasis of blood produced by constriction of the veins, although it is certain that erection is strengthened by obstruction to the outflow of the blood through the dorsal vein by the contraction of the anterior fibres of the accelerator urinæ muscle or the compressor venæ dorsalis of Houston.

The nerves concerned in the production of erection in the dog, and there is no reason to doubt their existence in man, arise, according to Eckhard, by two roots at the sacral plexus from the first to the third sacral nerves. Electrical stimulation of these, the erigent nerves, is followed by erection and ejaculation, while their division renders erection and emission impossible. Eckhard, moreover, produced erection by excitation of the lumbar, and lower and upper segments of the cervical spinal cord, the pons, and the crura cerebri, from which he inferred that the fibres of the erigent nerves which convey the impressions for erection arose in the cerebrum, and passed down through the crura and the pons to the cord. Goltz,³ however, discovered that, after the separation of the lumbar segment of the cord from its upper portion, irritation of the glans

¹ Beiträge zur Anat. und Phys., Bd. iii. p. 125, and Bd. vii. p. 67.

² Arbeiten aus der Phys. Anstatt zu Leipzig, 1866, p. i.

³ Pflüger's Archiv, Bd. viii. p. 460.

penis provoked a full erection, from which he concluded that the lumbar cord constituted an independent reflex centre for the genital functions; and, what is important in the study of psychical impotence, he demonstrated that this centre could be acted upon inhibitorily from the brain.

From the preceding considerations it is obvious that erections in the lower animals can be produced by stimulation of the brain, the spinal cord, and the peripheral nerves; and ample observations, both in health and disease, demonstrate that they originate in the same localities in man. The influence of certain emotional conditions of the mind over erection is illustrated by its being induced by sexual desires, or even by the sight or thought of certain women; while it may be arrested or prevented by mental preoccupation, or by depressing emotions, as fear of inability to consummate the venereal act, the loss of the object of one's affections, modesty, disgust, or frigidity. Irritation of the cord, and particularly of its cervical portion,¹ from disease, concussion, effusion of blood, or fracture or dislocation of the vertebræ, frequently occasions erections; and these may constitute the first sign of incipient ataxia,² or general paralysis of the insane, and other spinal affections. As illustrations of erections from peripheral irritation, those arising from the morning fulness of the bladder, from affections of the rectum, and from inflammation of the prostatic urethra and of the seminal vesicles may be mentioned.

¹ Ollivier, *Traité des Maladies de la Moëlle Epinière*, 3d ed., t. iii. p. 316.

² Trousseau, *Clin. Méd. de l'Hôtel-Dieu de Paris*, t. ii. p. 511; and Erb, *Ziemssen's Cyclopædia*, Amer. ed., vol. xiii. p. 545.

The capacity for coition is most marked between the ages of twenty and forty-five years; after which it gradually declines, and usually ceases after the sixty-fifth year. Sexual vigor is, moreover, greatly diminished by bodily exertion, such as gymnastic exercises, and by close mental occupation. Desire is also obtunded by the same causes.

Impotence may arise from diminished or abolished reflex excitability of the genito-spinal centre, or from disturbances of the brain which restrain the action of that centre; or it may be symptomatic of the prolonged use of certain remedies and beverages, or of various acute and chronic diseases; or it may depend upon congenital or acquired defects of the genital organs. In accordance with its etiology it may, therefore, be described as ATONIC, PSYCHICAL, SYMPTOMATIC, and ORGANIC. Of one hundred and fifty-three cases of which I have notes, one hundred and forty-nine were atonic, one was psychical, one was symptomatic, and two were organic.

SECT. II. ATONIC IMPOTENCE.

When the lumbar reflex centre for erection fails wholly or partially to respond to the ordinary stimuli the resulting impotence may be termed atonic, in the sense that the centre is deficient in activity, mobility, excitability, or tonicity, through which the muscular walls of the arterioles

and the muscular fibres of the trabeculæ of the erectile tissues are prevented from relaxing and admitting the requisite flow of blood into the penis, and through which the contractility of the ischio-cavernous and bulbo-cavernous muscles is impaired.

Atonic impotence depends either upon, or is maintained by, inflammation and hyperæsthesia of the prostatic portion of the urethra, or upon diminished or abolished reflex excitability of the genito-spinal centre without the intervention of those lesions. Of the one hundred and forty-nine cases that have come under my observation, one hundred and thirty-seven were of the former variety, and only twelve of the latter variety.

A.—ATONIC IMPOTENCE FROM HYPERÆSTHESIA AND INFLAMMATION OF THE PROSTATIC URETHRA.

ETIOLOGY.—From independent researches, which were first published in 1877,¹ I long ago reached the conclusion that impotence was generally induced by subacute or chronic inflammation and morbid sensibility of the prostatic urethra, which were frequently associated with stricture, and which were usually due to masturbation, gonorrhœa, sexual excesses, and constant excitement of the genital organs without gratification of the passions. In subsequent papers² I called attention to the fact, previously noticed by other writers, that inflammation of the

¹ Medical and Surgical Reporter, May 5th, 1877, p. 391.

² Trans. Amer. Med. Assoc., vol. 28, p. 523; and Med. News and Library, Sept. 1880, p. 513.

prostatic urethra bears the same relation to the spinal reflexes of the male that inflammation of the uterus bears to allied disorders in the female, and that it is a constant source of irritation of the genital nerves which terminate in that locality. An enfeebled state of the lumbar division of the cord and exhaustion of the cells that minister to its reflex functions are thus finally brought about.

In thirty-seven of the cases the subjects had been confirmed masturbators, and had also suffered from gonorrhœa, so that it is impossible to say upon which of these factors the trouble depended. Of one hundred patients, however, in whom the history was clear, sixty-nine were masturbators, thirty had had gonorrhœa, and one had indulged in excessive coition. Just how often prolonged and repeatedly ungratified sexual excitement produced by toying with females, as in Case XX., is to be considered a cause of the morbid changes which induce or maintain the affection I am unable to say, since young men addicted to this habit indulge their propensities in various ways.

With regard to masturbators who either never had sexual intercourse, or had never contracted gonorrhœa, I have made some notes that are interesting and practically important. Thus, I find that one in every three has an elongated prepuce; one in every five has an inflamed meatus; one in every two-and-a-half has an exquisitely sensitive urethra; that the same proportion suffers from prostatic or abnormal seminal discharges; and that one in every ten has a small, and usually a pointed and rigid, penis. In the papers already referred to I endeavored to show that confirmed masturbation is just as sure to result in urethritis and the formation of a stricture as is gleet;

and that the failure to discover this lesion would not have occurred to the majority of writers on the subject if they had resorted to the bulbous bougie for exploring the urethra. Of the sixty-nine masturbators who suffered from atonic impotence, and of the seventy who had seminal incontinence, as will be seen in the chapter on spermatorrhœa, or of one hundred and thirty-nine in all, only eighteen were free from stricture, so that a coarctation should always be looked for in this class of subjects. In about five-sixths of the cases there is only one stricture, while in the remainder two or more are present. In about one-sixth of the entire number the contraction is situated near the meatus.

As the knowledge of the connection between stricture of the urethra from masturbation and impotence, prostaticorrhœa, pollutions, and spermatorrhœa is of the utmost importance in regard to the treatment of these affections, I still further extended my investigations in this direction by an examination of fifty-six onanists in the Insane Department of the Philadelphia Hospital and the Pennsylvania Hospital for the Insane. Of twenty-seven inmates whose histories could be traced back, eighteen declared that they never had gonorrhœa. These were either epileptics, who, when their mental faculties are not enfeebled, are as capable of giving sensible accounts of themselves as others not so affected, or the subjects of chronic insanity or dementia, of whom it is characteristic that, if they remember anything at all, they can recall even the most trifling incidents that may have happened prior to the attack of insanity. In four other instances it was improbable that the patients ever had gonorrhœa, since they had been imbecile from childhood. In the

remaining five cases, the question of gonorrhœa could not be entertained, because the subjects were admitted at too early an age, and had afterwards never left the hospital. Their histories are briefly as follows:—

CASE I. An epileptic, aged twenty, admitted at the age of ten, had a stricture at six inches, which was defined by a No. 18 bulbous explorer.

CASE II. An epileptic, aged twenty-three, had been in the house twelve years, having been transferred from the Children's Asylum at the age of eleven. A stricture, calibre¹ 19, was detected at six inches and a half from the meatus, which was contracted; there was a gleet discharge; and the penis was large.

CASE III. An epileptic, aged thirteen, an inmate for three months, suffered from phimosis, with a stricture, calibre 17, at six inches and a half, and very marked prostatic hyperæsthesia.

CASE IV. An epileptic, aged nineteen, admitted at the age of eleven, had a stricture, calibre 19, at six inches, with a very sensitive urethra, and a gleet discharge.

CASE V. An idiot, aged fifteen, an inmate for three years, had a gleet discharge, and a stricture, calibre 18, at five inches and three-quarters.

These five cases, occurring, as they did, in young subjects, in whom the idea of gonorrhœa must be discarded,

¹ This and the succeeding measurements are in accordance with the French catheter scale. The calibre, therefore, represents the corresponding number of millimetres in circumference, a millimetre being equal to about the one-twenty-fifth of an inch.

sustain the view heretofore expressed that organic stricture is a common lesion of masturbation. The coarctations imparted the sensation of a firm, resisting obstacle upon the withdrawal of the bulbous explorer, and were distinctly recognized by my residents, Dr. Murray and Dr. Van Valzah, by Dr. Dease, Dr. Heath, and Dr. Musser.

Exclusive of these cases, my notes show that thirteen out of every one hundred cases of stricture are due to onanism; and Otis¹ states that nine per cent. of all cases are traceable to that practice. Ricord, Phillips, Leroy, Henry Smith, Gouley, and Gross also mention masturbation as a cause of stricture; and my views are, moreover, supported by the evidence of other authors, who are more explicit in their statements than those just referred to. Thus, Black² reports a typical case, associated with hyperæsthesia of the prostatic urethra, for which he was consulted on account of fear of sexual incapacity. In speaking of the etiology of stricture, Wade says: "I have good reason to believe that the pernicious habit of self-abuse is a much more frequent cause of stricture than is generally supposed. In several instances of the kind, in which there has been no sexual intercourse, the strictures, which were at the bulb, proved more than usually refractory, from the extreme morbid sensitiveness of the entire urethral canal." . . . "The complication of spermatorrhœa with stricture and a highly irritable state of the urethra often proves very troublesome, and re-

¹ On Stricture of the Male Urethra. Pamphlet, New York, 1875.

² On the Functional Diseases of the Renal, Urinary, and Reproductive Organs, Phila. 1872, p. 196.

quires great care and gentleness in its treatment. Such strictures are, in fact, not infrequently caused by masturbation."¹ Lizars asserts that stricture "is also often produced by self-abuse, since we find, in those affected with spermatorrhœa, that there exists more or less stricture of the urethra, for which it is necessary to dilate the canal before having recourse to the *porte-caustique*."² Lallemand³ refers to two cases in masturbators who had never had sexual intercourse, in one of which the stricture was very tight and rebellious to treatment. Three-quarters of a century ago, Sir Everard Home, in his work on the subject,⁴ devoted a chapter to "Strictures brought on by Onanism," but he classified them as spasmodic. In thus recognizing spasm of the urethra as an effect of masturbation, he described a condition which is the forerunner of permanent stricture, since, as is well known, spasmodic contraction is a very common cause of organic coarctation, and is, indeed, not infrequently found in connection with it.

In addition to the foregoing lesions masturbation may be followed by other local affections, which are due mainly to the extension of the morbid action from the inflamed prostatic urethra. Among the more common of these are irritability of the neck of the bladder, prostatorrhœa, nocturnal seminal discharges, and spermatorrhœa. It may also occasion spermatoecystitis, funiculitis, epididy-

¹ Stricture of the Urethra: Its Complications and Effects. 4th ed., pp. 21 and 318.

² Practical Observations on the Treatment of Stricture of the Urethra. 2d ed., p. 1.

³ Des Pertes Séminales Involontaires, t. i. p. 479.

⁴ Practical Observations on the Treatment, etc., vol. ii. p. 243.

mitis,¹ aspermatism² through obstruction of the epididymes or vasa deferentia, wasting of the testes,³ and, as will be pointed out in the next chapter, it is a fruitful source of azoospermism.

While in persons with an inherited predisposition to nervous diseases, as insanity and epilepsy, there is no reason to doubt that onanism may hasten their appearance, I believe that in the majority of cases it should be regarded rather as the effect than as the cause of these affections. From the constant occupation of the mind with the local troubles which it induces, it certainly does, however, give rise to a bad form of hypochondrism, which is akin to insanity. Masturbation and sexual excesses are among the most common of the causes of general paralysis of the insane, and the disorder is supposed to extend upwards from the cord to the brain. An examination of four cases of this affection has convinced me that there is a source of reflex irritability of the cord in the urethra. In one, in the second stage, there was a stricture, calibre 21, at seven inches from the meatus. In another instance, in the first stage, there was a large granular patch at six inches and a half, and a gleety discharge. A similar condition was detected at six inches and a quarter, in a man in the second stage; while, in the fourth case, which was far advanced in the third stage, there was also a granular patch at six inches and a half, and the bougie brought

¹ See Case XV. p. 36.

² Liégeois, *Medical Times and Gazette*, vol. ii. 1869, p. 381; and Terrillon, *Annales de Dermatologie et de Syphiligraphie*, ser. 2, t. i. p. 439.

³ Curling, *Diseases of the Testes*, 4th ed., p. 78; and Brodie, *Lond. Med. and Phys. Journ.*, vol. lvi. p. 297.

away an abundant brownish fluid from the prostatic urethra. Whether these morbid states served as factors in the production of the disease, or simply maintained the nervous disturbance, I am unable to decide; but, if the former view be the correct one, functional conditions of the cord should be prevented from passing into organic changes by curing the peripheral sources of irritation in the first stage of the affection, or when the peculiar gait and slight trouble in speech are associated with extravagant ideas. I have never known insanity, dementia, or phthisis to follow onanism, as they are said to do by Ritchie, Esquirol, Pinel, Deslandes, Maudsley, Smith, Acton, and other writers, nor have I ever met with the distressing cases described by Lallemand; and I fully agree with Sir James Paget¹ in the statements that "masturbation does neither more nor less harm than sexual intercourse practised with the same frequency in the same conditions of general health, and age, and circumstances," and that the ills which result from it when indulged in by young persons are due more to the "quantity, not the method." Unfortunately, however, it is begun earlier in life² than coition; and, as it does not require the coöperation of the opposite sex, it can be practised to a greater extent, and at all times, and even when erection is incomplete.

Of the remaining remote causes of atonic impotence, namely, gonorrhœa and sexual excesses, which induce

¹ Clinical Lectures and Essays, p. 284.

² Fleischmann, in the Wiener Med. Presse, 1878, p. 9, narrates a case in which an infant began to masturbate at nine months of age, by crossing the legs and setting up rocking motions of the pelvis and body; and Barthéz-Rilliet, Marjolin, Von Bambecke, Jacobi, and Morton have recorded examples in young children who were not sucklings.

and keep up hyperæsthesia and inflammation of the prostatic urethra, it need only be said that they are followed by precisely the same lesions as are met with in masturbation. In his classical writings on Diseases of the Spinal Cord, Erb¹ declares that sexual excesses and irregularities occupy a prominent position in the predisposition to, and production of, many spinal affections, among which may be mentioned spinal irritation, neurasthenia, chronic meningitis and myelitis, softening, and inflammation of the anterior horns, or poliomyelitis; and this view is held by many other distinguished authors, as Rosenthal, Hammond, and Romberg.

CLASSIFICATION.—Atonic impotence varies in degree, and may be divided into the following classes:

First. The erection is imperfect and of short duration, and ejaculation is frequently too precipitate, but sexual desire remains, and intercourse is possible, although incomplete.

Second. The erection is either so feeble that intromission is impossible, or it is entirely absent. As in the preceding form, desire is present.

Third. In the last phase of the affection, not only is there loss of power of erection, but desire is completely abolished.

Of the relative frequency of these three varieties of impotence, an examination of the one hundred and thirty-seven cases previously alluded to shows that one hundred and twenty-seven were examples of feeble erection and premature ejaculation; seven were instances of loss of power of erection, with retention of desire; and three

¹ Loc. cit., p. 147.

were examples of failure of both erection and desire; and I have no hesitation in declaring that the first form is more common than impotence from all other causes combined.

CLINICAL HISTORY.—As my readers will gain a better insight into the peculiarities of the three varieties by a narration of cases than by a general and abstract description, I append some typical examples.

CASE VI. A grocer, twenty-two years of age, consulted me on the 12th of October, 1876, on account of impaired erections and premature ejaculation. He began to masturbate at the age of fourteen, and continued the practice for three years. Its abandonment was followed by nocturnal seminal emissions of an intermittent character, that is to say, they recurred almost every night for a fortnight, when there was an intermission of a week's duration. He had been under treatment for two years before coming to me, the effect of which was to improve his general health and materially lessen the frequency of the nocturnal discharges. Up to one year ago he had never had sexual intercourse. At that time he found that erection was incomplete, the gland of the penis, in particular, being soft and inelastic, and that ejaculation took place in a few seconds. The same troubles had existed ever since. During the past two months nocturnal emissions had occurred from one to five times a week, and he noticed that flakes of mucus, which he supposed to be semen, were discharged in advance of the stream of urine. He was easily fatigued, his hand was unsteady in writing, he was habitually constipated, and he suffered from dull, heavy pains in the groins and back.

Examination with the bulbous explorer disclosed slight tenderness of the urethra half an inch from the meatus, and decided tenderness at four inches and a half, which increased as the prostatic urethra was reached. On withdrawing the instrument, a stricture, calibre 10, was detected at five inches and a quarter

from the meatus. The bulb brought out a whitish fluid, which showed, under the microscope, a large amount of pus and epithelium. The urine was acid and loaded with lithates, but the genital organs were normal.

I prescribed a laxative pill, to be taken as often as it might be required, warm hip-baths, and warm enemata night and morning, and thirty grains of bromide of potassium every eight hours. The diet was restricted to perfectly bland and digestible articles; sexual intercourse and stimulating drinks were interdicted; and an injection of one drachm of Goulard's extract to ten ounces of water was directed to be thrown into the urethra three times a day.

On the 14th I passed a No. 10 steel bougie, and continued its introduction every second day until the 26th, when it was employed once every twenty-four hours by the patient himself. At first it was immediately withdrawn, but as the sensibility of the urethra became obtunded, it was permitted to remain longer, but at no time more than five minutes. The size was gradually increased, until toward the close of the treatment it reached No. 27. During the first week there were three nocturnal emissions; but from that time until I discharged the patient, on the 3d of December, when his sexual powers were entirely regained, there was only one. I saw this man again early in January, 1877, on account of a chancre, when he informed me that he had experienced no trouble whatever in sexual congress.

CASE VII. A mechanic, twenty-six years of age, states that he has had intercourse with one woman three or four times every night for the past eighteen months, and that he occasionally fulfilled engagements of a similar nature with other females. He had never masturbated much, nor had he ever contracted gonorrhœa. Lately he has observed that his powers were growing feeble; and at present the erections are flabby, and the ejaculations, when penetration is possible, are precipitate. He looks pale, is easily fatigued, and suffers from pain in the back, and from frequent and painful micturition. A No. 25 explorer detects a very sensitive

urethra, and a stricture, calibre 24, seated at six inches from the meatus. The neck of the bladder is so sensitive that it contracts when the instrument comes in contact with it, so that its onward progress is momentarily arrested.

CASE VIII. A weaver, thirty-seven years of age, has had gonorrhœa three times, the last attack having occurred fourteen years ago. For the past three years he has noticed that the erections were becoming more and more feeble, until they frequently passed off before intromission, and coition was always attended with hasty emission. In addition to his sexual troubles, he complains of numbness along the outer side of the left thigh, almost constant dorsal pain, and a dull, heavy pain in the back of the head, the left side of the neck, and the left shoulder, all of which localities now and then suddenly become red and hot. The suffering is aggravated by exercise and continuous work; his sleep is unrefreshing, and he has dyspeptic symptoms. He has two strictures, the first of which, calibre 17, is located at three inches and a half, and the second, calibre 15, is six inches from the meatus; and the prostatic urethra is morbidly sensitive.

In the preceding illustrations of the first variety of atonic impotence, the exciting causes were chronic hyperæsthesia and inflammation of the prostatic urethra, which were produced, respectively, by masturbation, by sexual excesses, and by gonorrhœa, and were maintained by one or more strictures. One case was complicated by nocturnal emissions, and another by inflammation of the neck of the bladder; and in all there were symptoms of neurasthenia.

In this form of the affection may be included the condition known as irritable weakness, or spasmodic spermatorrhœa, or spermaspasmus, in which, the erection being more or less complete, ejaculation occurs before penetra-

tion, simultaneously with erection, or even before erection. These points are illustrated by the following cases:—

CASE IX. A merchant, thirty-seven years of age, had masturbated up to his eighteenth year, and has been in the habit of toying with women ever since. At his first attempt at connection, which took place when he was twenty-nine years old, he found that the erection was imperfect, and that ejaculation occurred before intromission; and he stated that these troubles still continued. There was a stricture, calibre 18, at six inches from the meatus, and the prostatic urethra was exquisitely sensitive.

CASE X. A clerk, thirty years of age, brought me a specimen of urine for examination, which I found to contain an abundance of motionless spermatozoa, oxalate of lime, and a few pus corpuscles and epithelial cells. He never had gonorrhœa, but he had masturbated from his sixteenth to his twenty-first year, on an average, twice a day. There was a constant sticky feeling at the meatus, and he informed me that for the past three years, whenever he passed an evening with the lady upon whom he had fixed his affections, he had an erection, with a simultaneous emission. The hands and feet were habitually cold, and he had no knowledge of nocturnal emissions for five years. The explorer detected a stricture, calibre 17, at six inches and a half from the meatus, and there was marked hyperæsthesia of the prostatic urethra.

CASE XI. A physician, thirty-four years of age, had masturbated from his fifteenth to his seventeenth year, and had contracted gonorrhœa eleven years ago. For ten years he was unable to have connection, in consequence of ejaculation at the moment of penetration; and for the past three years emission occurred before erection, and he had nocturnal pollutions from two to three times a week. The meatus would admit only a No. 17 explorer; but after its enlargement, a stricture, calibre 25, was discovered at six inches and one eighth, and the prostatic urethra was very sensitive.

The subjoined illustrations are good examples of the second variety of impotence, or of that in which desire is retained, but in which the power of erection is lost, and coition is impossible.

CASE XII. A tavern-keeper, thirty-two years of age, of robust frame, stated that he was engaged to be married in six weeks; that he could not command an erection, although he had sexual desires; that the presence of the object of his affections, and the most lascivious books and pictures, which formerly brought on an erection, had lost that effect; and that the thought of his disability on his wedding-night was constantly preying upon his mind. This condition of affairs had existed for five months, during which time he had nocturnal seminal emissions about twice a week. He was, moreover, much alarmed at the presence of some shreds of purulent mucus in his urine, which he thought was seminal fluid. He had had three attacks of gonorrhœa, the last of which occurred seven years ago, since which period he has always had a slight gleety discharge, and for the past few months a dribbling of a few drops of urine in his clothes after the act of micturition was apparently completed. He suffered from habitual constipation, but in other respects he was the picture of health.

The bulbous explorer defined two strictures, calibre 23, located, respectively, at six inches, and at six inches and a half, from the external meatus, as well as marked hyperæsthesia of the prostatic urethra.

CASE XIII. A mechanic, twenty-three years of age, at about his sixteenth year, after having been in the habit of masturbating freely for six or seven years, observed a urethral discharge. He had never had sexual intercourse until he was twenty-one; and, after a few months of moderate indulgence, the discharge had increased, and the erections had become more and more weak, until he was finally unable to consummate the act, although the desire remained. He is pale; suffers much from pain in the back, the

shoulders, the anus, and the left temporo-maxillary articulation; and is easily fatigued.

Examination with a No. 25 explorer disclosed intense hyperæsthesia of the entire urethra, and particularly of its prostatic portion, but there was no indication of a stricture. As soon as the instrument entered the passage it occasioned tremor and retraction of the testes, and when it reached the prostatic portion he shrank from the excessive suffering which it awakened, and the muscles of the lids, nose, and mouth twitched convulsively. On its withdrawal, the bulb brought away a considerable prostatic discharge. He afterwards rode to his house in the street cars, and about two hours later, after urinating, he was seized with a curious crawling sensation in his arms and legs, lost consciousness, and, when found by his friends, was lying on the floor, and his face was livid. Three days subsequently, he was placed upon thirty grains of bromide of potassium, with five drops each of juice of belladonna and tincture of gelsemium, every eight hours, and directed to take ten grains of quinia one hour before his next visit, which occurred one week ago. At that time a conical steel bougie was passed, and one-third of a grain of morphia thrown under his skin. A slight epileptoid paroxysm, as indicated by clonic spasms of the muscles of the arms and eyelids, and a feeling as if he would become unconscious, ensued; and these symptoms were followed by prostration and numbness of both hands.

In the third phase, or as it is sometimes called the paralytic form, of the affection, erection and desire are completely abolished, as is illustrated by the following instances:—

CASE XIV. A medical student, twenty-four years of age, had masturbated excessively for six years, and for the past two years, during which period he had discontinued the practice, had nocturnal seminal emissions, on an average, twice a week. When I saw him he stated that he had lost all desire, and had been unable to

command an erection for three months. He was very watchful of a gleet discharge, and brought with him, for my inspection, a specimen of urine which contained little threads of mucus, which he imagined to be semen. His general health was broken; his expression was woe-begone; he was gloomy, shy, and reserved, and unable to fix his attention upon his studies, and easily fatigued. He was constantly thinking of his previous bad habit and the nocturnal emissions, and was convinced that his condition was beyond relief. In a word, he was a victim of sexual hypochondrism.

The external genital organs, and the prostate and seminal vesicles, as far as rectal touch enabled me to form an opinion, were perfectly normal; but the urinary meatus was constantly moist, and its lips were red and pouting. At five inches and three-quarters from the meatus I detected a stricture, calibre 17, and also found that the urethra behind it was extremely sensitive. Placing a little of the fluid, which was withdrawn by the explorer, under the microscope, I demonstrated to my patient that it was free from spermatozoa, and I still further endeavored to gain his confidence by assuring him that his disability was temporary, since, from its dependence upon appreciable lesions, it could be cured. Under appropriate treatment, in three weeks, the pollutions had decreased in frequency, the prostatic discharge had lessened in quantity, the hyperæsthesia had notably diminished, and he had begun to have feeble erections. At the expiration of a month I divided the stricture, and he went with me to the seashore. In three weeks, or eleven weeks from the commencement of the treatment, he had good erections, and his mental anxiety was calmed; but, unfortunately, he desired to test his powers, and had an almost instantaneous ejaculation with cessation of erection. This act, which he undertook entirely on his own responsibility, undid all the good I had effected; and it was only after the expiration of eight months that he finally recovered under the employment of galvanism.

CASE XV. A druggist, twenty-four years of age, came to me on account of vesical irritability, under which he had labored for six years. He has never had sexual intercourse, but had mastur-

bated from boyhood until his twentieth year, and desire and power of erection had been abolished for nearly four years. The entire urethra and neck of the bladder were excessively sensitive, and a stricture, calibre 17, was detected at six inches and one-fifth from the meatus, which measured thirty-three millimetres in circumference. The epididymes, but especially the right, were enlarged and indurated.

In the majority of cases of atonic impotence which I have inserted for the purpose of illustrating the various phases of the affection, in addition to the lesions of the urethra, it will have been perceived that certain subjective symptoms were present, which were indicative of spinal exhaustion, the depressed form of spinal irritation, or neurasthenia. Prominent among these signs are pain in the back, which is increased by exercise, exposure to atmospheric vicissitudes, and attempts at coition, and muscular weakness of the limbs, so that the subjects are tired out by comparatively slight exertions and walking. These symptoms point, to use the term introduced by Beard,¹ to myelasthenia of the lumbar division of the cord. In a certain number of examples, as in Case VIII., there is dull, heavy pain in the back of the head, the neck, and shoulders, which now and then become flushed, signs which are indicative of exhaustion of the upper portion of the cord. In other instances the symptoms are those of cerebrasthenia, such as impairment of memory, mental debility, depression, anxiety, or irritability, a feeling of fulness in the head, asthenopia, and other disorders of the special senses; all of which are signs of enfeeblement of the functional power of the

¹ A Practical Treatise on Nervous Exhaustion, 2d ed., p. 106; and Medical Record, vol. i., 1879, p. 184.

brain, and which may readily be explained by the commissural connections between the lumbar division of the cord and the higher centres. In other cases, again, the symptoms are variously interwoven; and in all troubled and unrefreshing sleep, a feeling of heaviness on rising, coldness of the hands and feet, poor appetite,

Fig. 1.



Exploratory bulbous
bougie.

coated tongue, flatulence, a sense of weight in the epigastrium after eating, palpitation of the heart, sick headache, vertigo, and constipation, are very common. The various phenomena of neurasthenia, which are so frequently met with in the affections of the male reproductive organs, have been exhaustively investigated in this country by Beard, and his writings on that subject are well worthy of careful study.

DIAGNOSIS.—The diagnosis of atonic impotence is readily made from a consideration of the preceding observations. In all cases the urethra should be examined with the view of determining the presence or absence of lesions which induce or maintain the disorder. For this purpose, the exploratory, or acorn-headed, soft bougie, represented in fig. 1, should be resorted to, as it is the only instrument with which granular patches and strictures of large calibre can be accurately defined, and with which morbid discharges can be withdrawn for minute examination. One being

selected which fills, without unpleasantly stretching, the meatus, it is well oiled and inserted as far as the bladder. If there be a coarctation, its introduction will be arrested, when smaller sizes are successively employed, until one will pass without difficulty. On its withdrawal, the abrupt shoulder of the bulb coming in contact with the posterior face of the obstruction imparts to the touch a sensation as if it had jumped over a narrow band, which is as perceptible to the patient as it is to the surgeon, and is very different from the sensation conveyed by spasm. In the latter the instrument may be grasped for a time, but the muscular contractions soon cease, or may be made to cease by carrying the bulb several times through the obstruction; while a granular patch gives the impression of a limited roughness of the canal.

Hyperæsthesia of the urethra is readily detected by the ordinary metallic bougie, catheter, or sound; and its existence should never be based upon the passage of the soft explorer alone, as the insertion of that instrument is productive of far more pain than the ordinary nickel-plated bougie. If the surgeon should deem it desirable, he may confirm his diagnosis by a resort to the endoscope, with which Grunfeld¹ has discovered hyperæmia and catarrhal swelling of the verumontanum in cases of impotence, prostatorrhœa, and spermatorrhœa. I myself never employ it, nor do I think that any additional information is to be gained from its use.

In the absence of proper instruments for exploring the urethra, the general practitioner may suspect inflamma-

¹ Endoskopische Befunde bei Erkrankungen des Samenhügels. Wien, 1880.

tion and morbid sensibility if there be painful and frequent micturition, painful ejaculation, a feeling of weight in the ano-rectal region, a gleet discharge, prostatorrhœa, abnormal nocturnal emissions, and sensibility of the prostate on pressure with the finger in the rectum.

PROGNOSIS.—The milder forms of impotence are very amenable to treatment, as is illustrated by the following example:—

CASE XVI. A carriage-builder, twenty-three years of age, came to me on the 8th of April, 1880, on account of a gleet discharge, which kept the lips of the meatus glued together, and had existed for two years and a half; of a discharge of prostatic fluid at stool; and of nocturnal seminal emissions, which were often as frequent as every night during a single week, now and then occurring to the number of three in a night, and averaging three a week. The erections were feeble, and ejaculation was premature. The bowels were costive, but he had no signs of spinal exhaustion. Examination with a No. 17 explorer disclosed a stricture one-eighth of an inch behind a contracted meatus, and a highly sensitive urethra, especially in its membranous and prostatic divisions. On withdrawing the instrument, a few drops of prostatic fluid came away. I laid open the meatus along with the stricture, and directed a pill composed of two grains of compound extract of colocyath and half a grain of extract of nux vomica at bedtime, along with the one-sixtieth of a grain of atropia in solution, and thirty grains of bromide of potassium every eight hours. The incision was prevented from closing by the passage of a No. 30 conical steel bougie, which was carried through the entire urethra every other day. On the 6th of May the hyperæsthesia had almost entirely disappeared; the gleet had ceased; there was merely a slight prostatic discharge, if the bowels were allowed to become constipated, but he had not noticed it for several days; there were nocturnal emissions on the nights of April 17 and 18, and the erec-

tions were improving in vigor. The treatment was continued, and a cure was effected in another month.

This case is not a selected one; and whenever a patient presents himself who has erections and desire, even if he has a prostatic discharge, or too frequent nocturnal pollutions, or is suffering with both of these complications, the surgeon will be perfectly justifiable in promising relief. In the second variety of the affection, in which desire remains, but in which the erections are so feeble that penetration is impossible, or are entirely absent, it is not uncommon for the man to have an erection and an emission under the influence of a voluptuous dream, thereby showing that the sexual instinct is not entirely lost. In such a case as this the prognosis is also favorable, although the patient will have to remain longer under treatment. When both desire and erection are abolished, and the man is suffering from hypochondrism, the outlook is bad, particularly if we cannot gain his confidence, and he is not open to moral treatment. In this class of cases, if there is neither hypochondrism nor neurasthenia, the prognosis is good. In Case XII., which was an example of the latter condition, I divided the strictures on the 11th of September, and placed the man upon bromide of potassium and tincture of veratrum viride, a laxative pill, as it might be required, warm sitz-baths, and a restricted diet, and enjoined abstinence from everything which was calculated to excite the genital organs. He married on the 6th of November, having in the mean while passed a No. 32 conical steel bougie every twenty-four hours until the tenderness of the prostatic urethra had disappeared, and he wrote me five days subsequently that he had had con-

nection every night. I cautioned him against committing such marital excess, lest sexual abuse might cause a relapse.

The prognosis is not so good when the disorder arises from excessive onanism commenced early in life by nervous, impressible boys. When impotence is developed after the age of forty, the patient should be made to understand that his pristine vigor can scarcely be expected to be restored, since the power to copulate naturally diminishes at that age.

TREATMENT.—In the management of atonic impotence, a thorough examination of the genital and associated organs should be made, with the view of getting rid of the causes which produce and maintain it. If the patient has a redundant prepuce, it should be removed; if the meatus be contracted, it should be enlarged; while herpes of the prepuce and glans, or balanitis, should be treated in the usual way. All of these lesions are capable of setting up hyperæsthesia of the prostatic portion of the urethra, or even of exciting reflex impotence without the intervention of prostatic trouble, and their relief is quite sufficient in mild cases to bring about a cure. The same statement is true of certain diseases of the bladder and rectum, so that these viscera should not be overlooked.

Atonic impotence usually occurs in robust subjects, in whom inflammation and morbid sensibility of the prostatic portion of the urethra have set in before the signs of myelasthenia are pronounced, the usual symptom, according to my experience, being pain in the back. Hence the treatment, whether this be local or general, must be of a sedative nature; and the patient, at the outset, should be

impressed with the importance of avoiding all sources of sexual excitement, such as masturbation, attempts at intercourse, dalliance with women, and lascivious thoughts and literature; and if his sexual propensities are marked, they should be kept under control by mental application and gymnastic exercises.

Of the *local measures* to overcome hyperæmia, inflammation, and hyperæsthesia of the prostatic urethra, not one is so universally applicable as the passage of the nickel-plated conical steel bougie represented in fig. 2. The size of the instrument is to be gauged by that of the meatus, if it be normal, or by that of the stricture, if one be present, and its circumference should be gradually increased up to that of the full capacity of the urethra, as indicated by the urethrometer. To effect this, however, the meatus will have to be enlarged as a preliminary measure; or, instead of this, my urethral dilator, represented in fig. 3, which dispenses with the operation, may be employed. At first the bougie should be at once withdrawn, and the intervals between the insertion should be seventy-two hours. With the decrease of the sensibility it should be retained longer, and the intervals of introduction be shortened until it is passed daily.

If the case is complicated by an irritable or resilient stricture, it should be subjected to internal division from behind forwards, as no progress can be made unless the contraction is a simple one. For this purpose, I prefer the instrument devised by myself several years ago, as I have found from ample experience that its simplicity of construction and perfection of action leave nothing to be desired. The essential part of the contrivance is its acorn-headed distal extremity, through which the situation of

Fig. 2.



Conical steel bougie.

Fig. 3.



Author's urethral dilator.

the coarctation is accurately determined. To use the exploratory urethrotome, the stricture having been passed, and its posterior face having been defined by the projecting shoulder of the bulb, the bulb is carried at least half an inch towards the bladder, as the object is to divide, along with the contraction, the sound tissues to that extent behind and in front of it; then the blade is protruded, as in fig. 4, and the parts cut as the instrument is withdrawn, the penis being put upon the stretch to render the urethra tense. In the event of the tissues being thick or resistant, the section may be materially aided by counter-pressure with the fingers of the left hand along the median line. The bulb is then used as an explorer to detect any undivided bands, which, if discovered, should be severed, since thorough section of all narrowed points is essential to success. In regard to the subsequent treatment, I need only refer to my views published elsewhere,¹ as its consideration would be out of place here.

Fig. 4.



Author's urethrotome.

It now and then happens, as in Case XII., that the entire urethra is so excessively sensitive that the introduction of the bougie is followed by an epileptoid paroxysm, or that the patient faints. Under these circumstances, it is wiser to desist from its use until the sensibility of the passage has been obtunded by the injection, every eight

¹ Gross on the Urinary Organs, 3d ed., p. 480; Med. Record, June 15, 1878, p. 461; and Trans. Med. Soc. State of Penna., vol. xii. part i. p. 67.

hours, of three grains of chloral, and ten grains of bromide of potassium to the ounce of water, and by the internal exhibition, at the same intervals, of thirty grains of the bromide, ten drops of tincture of cannabis indica, and five drops of tincture of gelsemium, and by sitz-baths of water as warm as it can be borne.

In many instances it will be found that the inflammation and hyperæsthesia are finally reduced to a small, and probably granular, patch, which proves rebellious to the bougie, but which usually disappears under the application of astringent remedies. Of these, I prefer a solution of nitrate of silver, carried to the tender spot by a contrivance which is essentially that of Felix Guyon,¹ and which, as is shown in fig. 5, consists of a syringe of the capacity of rather less than a drachm, and of an ordinary bulbous explorer perforated at the apex of the bulb. The syringe having been charged with the solution, and its nozzle attached to the explorer, pressure is made upon the piston, until a drop of the fluid appears at the small opening. Wiping this off, the oiled instrument is then carried down until the bulb defines the inflamed patch—and it does this with the greatest accuracy—when it is slightly withdrawn, and a few drops are deposited in the urethra. The bladder should be evacuated before the application of the instrument, and the patient should be kept in bed and use demulcent drinks for a few hours subsequently. With these precautions, the pain and desire to urinate will usually not last more than thirty minutes, but there will be some scalding during the next act of micturition. When I first adopted this practice, about ten years

¹ Bull. Gén. de Thér., 1867, p. 501.

ago, I employed ten grains of the salt to the ounce of distilled water, at intervals of one week; but from an extended experience, I now commonly use thirty grains, and repeat the injection every four days.

Fig. 5.



Syringe and perforated bulbous explorer.

As the soft, perforated bulbous explorers are not easily procured in this country, and as they are liable to wear out, I have had constructed a curved hard-rubber attach-

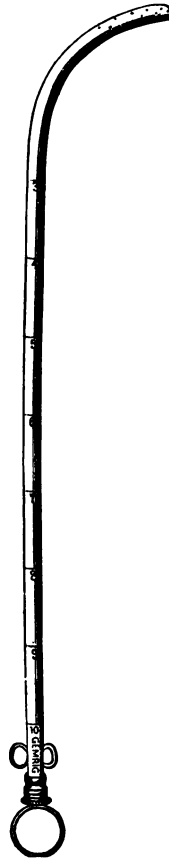
ment for the syringe, which is eight inches long, and which is provided, as is shown in fig. 6, with an acorn-shaped head

Fig. 6.



Bulbous nozzle.

Fig. 7.

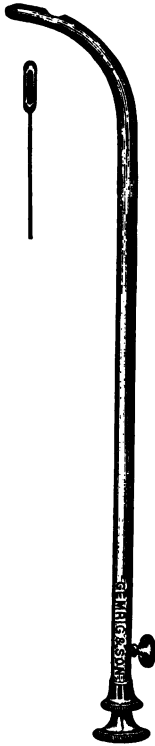


Dick's catheter-syringe.

or bulb. This instrument is not quite so good in regard to accuracy of definition of the inflamed patch as the preceding one, but, with that exception, it constitutes the

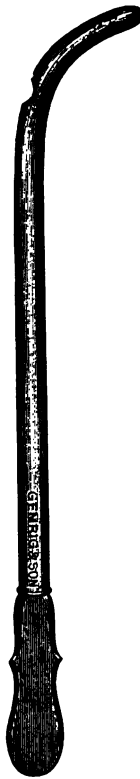
best of the contrivances for the purposes to which it is adapted.

Fig. 8.



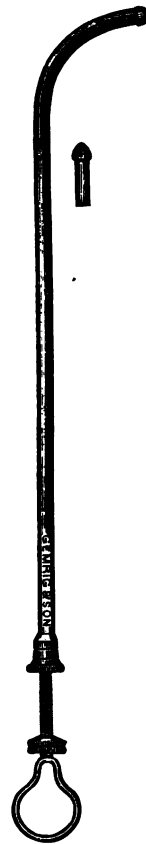
S. D. Gross's porte-caustique.

Fig. 9.



Cupped conical steel bougie.

Fig. 10.



Harrison's porte-remède.

In the absence of the foregoing instruments, Dick's catheter-syringe, fig. 7, may be employed; or the cup attached to the stylet of Gross's porte-caustique, fig. 8,

may be charged with five grains of nitrate of silver to the drachm of ointment of stramonium, which I regard as far preferable to the fused salt, as the latter exerts a destructive action on the mucous membrane unless the cauterization is lightly performed. The glycerole of tannin, applied by means of a sound, fig. 9, having a cup at the convexity of the curve, just anterior to the shaft, frequently answers a good purpose. The depression filled with the solid mass is kept in contact with the inflamed patch for a few minutes, or until it is melted by the heat of the parts; but this mode of medication is open to the objection that some of the liquefied paste is deposited along the whole length of the urethra during the withdrawal of the instrument.

Another excellent mode of applying astringents is by the deposition of small soluble suppositories of cocoa butter in the affected portion of the urethra by means of the modified porte-remède of Harrison, of Liverpool, shown in fig. 10. The instrument consists of a metallic catheter, open at the end for the reception of the suppository, which is so shaped as to form a bulbous extremity for the instrument. The exposed surface is hardened by a layer of spermaceti, so as to prevent its becoming dissolved in passing down the urethra. For ordinary use the suppository may contain a quarter of a grain of nitrate of silver, or two grains of tannin, or half a grain of acetate of lead.

When the affection proves to be more obstinate, I have found that flying blisters, made by pencilling cantharidal collodion first on the one side of the perineal raphé, and, after the surface has healed, on the opposite side, are of the utmost value. The agent should be applied in the

morning, as it is liable to prevent sleep, and great care should be taken to avoid vesication of the scrotum and anus.

Of *general remedies*, the aphrodisiacs, as cantharides, phosphorus, phosphide of zinc, strychnia, and damiana, are to be studiously avoided, since the parts are to be kept still further at rest by the administration of agents which diminish the reflex excitability of the cord and suspend sexual desires and the power of erection. Of the remedies of this class, bromide of potassium is by far the best, as it not only blunts the venereal appetite, but corrects the acidity of the urine, and exerts an anæsthetic influence upon the mucous membrane of the urethra. I am in the habit of administering thirty grains of the salt every eight hours, unless I find that it makes the patient drowsy during the day, when I order a drachm to be taken at bedtime. If it is not well borne, as is indicated by physical and mental languor, weakness of the heart, pallor, uncertain gait, acne, and other signs of bromism, its use must be discontinued for a time; or its cumulative action must be prevented by promoting its excretion by the urine by combining with it a diuretic, as ten grains of nitrate or bitartrate of potassa, as recommended by Rosenthal;¹ this combination is far better than that with Fowler's solution, which is advised by Gowers and Bartholow.² When the patient is anæmic, I prefer to administer a drachm at night, and give him three grains of quinine along with twenty-five drops of the tincture of the chloride of iron three times during the day. My own empirical observations in regard to the value of quinine

¹ Wiener Klinik, May, 1880, p. 159.

² Materia Medica and Therapeutics, 3d ed., p. 406.

in decreasing the depression produced by the bromides in asthenic subjects have recently been confirmed by Dr. Landon Carter Gray,¹ who has shown that it not only increases the sedative effects of the latter, but that it diminishes or dispels bromism.

When the patient is robust and plethoric, I frequently add to each dose of the bromide ten drops of the tincture of *veratrum viride* or tincture of *gelsemium*; or the bromide may be given in half an ounce of the infusion of *digitalis*; and I have every reason to be pleased with the action of the combinations. Instead of the bromide of potassium, the monobromide of camphor may be employed to the extent of about twelve grains in the twenty-four hours, but its effects are not so striking as those of the former remedy.

When the penis is cold and rigid, atropia is indicated to overcome the contraction of the muscular fibres of the trabeculæ of the erectile bodies, and to induce dilatation of the arterioles and an increased flow of blood through the organ; and its good effects are also evinced by the diminution of the number or the entire cessation of the nocturnal emissions and prostatic discharges which frequently complicate the affection. One-sixtieth of a grain in solution should be administered on rising; and when its peculiar action is denoted by dryness of the mouth, thirst, dilatation of the pupils, and slight confusion of vision, that quantity should be taken on retiring, so that the patient may sleep through its disagreeable effects.

Of the remaining anaphrodisiacs, which have been recommended in the management of impotence, camphor

¹ Archives of Medicine, October, 1880, p. 191.

and lupuline cannot be relied upon; while arsenic evinces its depressing action on the sexual functions only when administered in such large doses as to occasion objectionable disorders of the circulatory, digestive, and nervous systems.

Among the accessory measures I know of none that is more grateful to the patient, and more relaxing and soothing to the irritable organs, than a sitz-bath at a temperature of about 95° F., taken for fifteen minutes every morning and evening. In the absence of facilities for bathing, a sponge dipped in water at a temperature of about 100° F. may be applied to the perineum and the back. Cold baths, which are recommended by many authors, are to be studiously avoided, as they aggravate the local troubles.

In a large proportion of cases the bowels are habitually constipated. They should be kept in a soluble condition, particular attention being paid to the rectum. For this purpose, tepid water may be injected every morning, as it has the additional advantage of soothing the hyperæsthetic prostatic urethra. If enemata do not answer the purpose, and if there is atony of the muscular coat of the intestines, a pill composed of two grains of compound extract of colocynth, half a grain of extract of *nux vomica*, and the tenth of a grain of extract of *belladonna* may be administered on going to bed; or a wine-glass of Hunyadi water, or two drachms of equal parts of Epsom and Rochelle salt, may be ordered every morning.

Any special dyspeptic symptoms are to be met by appropriate remedies. The diet should be nutritious and digestible, but unstimulating; and coffee, malt, and alcoholic liquors must be eschewed, and the last daily meal

should be light. The patient should sleep on a hard mattress, use only the lightest coverings, and empty his bladder thoroughly on retiring, and early in the morning if a more or less complete erection indicates fulness of that viscus. He is, moreover, to be warned against horse-back exercise and driving over rough streets, and all other forms of amusement which tend to produce hyperæmia of the genitalia, as well as against bodily and mental fatigue if the signs of spinal and cerebral neurasthenia be marked.

Up to this point the treatment, both local and general, has been addressed to relieving the inflammation and hyperæsthesia of the prostatic portion of the urethra. When this has been accomplished, abundant observation has convinced me that nothing more, as a rule, is required. Cases, however, do occur in which, after the local lesions have been cured, the irritability of the genital centre is still so exhausted that the erections are not sufficiently vigorous, and the ejaculations are premature. Under these circumstances, as well as in the rarer form of atonic impotence, in which the prostatic urethra is devoid of lesions, but in which a stricture, if one be present, will require preliminary treatment, the object is to restore the sexual powers to their normal condition by remedies which tone up the system at large and excite the reflex activity of the genito-spinal centre. An excellent combination is twenty-five drops of the tincture of the chloride of iron, ten drops of tincture of *nux vomica*, and two grains of quinia, to be taken before meals in a wineglassful of sweetened water, which may be replaced by the syrup of the phosphate of iron, quinia, and strychnia, in teaspoonful doses, or by the following combination, which is probably more efficacious than either of the preceding ones:—

R.—Quiniæ sulph.,
Ferri sulph., āā ℥ij;
Zinci phosphidi, gr. ij;
Acidi arseniosi, gr. jss;
Strychniæ sulph., gr. $\frac{2}{3}$.
M.—Ft. pil. no. xl.
S.—Two pills every eight hours.

The fluid extract of damiana, in doses of from two to four drachms every eight hours, is said by Caldwell,¹ of Baltimore, to be a capital tonic to the nervous centres which preside over erection, and his observations are confirmed by Edwards,² of Richmond.

Among the tonic agents cold sitz-baths and cold applications to the lumbar region for about ten minutes hold a high position. At the commencement it will be wise to employ water at a temperature of 60° F., and to gradually lower the temperature until it is finally reduced to 46° F. The efficiency of the remedy will be heightened by gently projecting a stream of cold water against the perineum and back; and one of my patients informs me that he has derived the best results from douches of moderate volume after emerging from a Turkish bath. To promote reaction and increase the flow of blood to the lower divisions of the spinal cord and the genitalia, the parts should be briskly rubbed after they are dry with a moderately coarse towel or with a flesh-brush.

Cold may be applied directly to the prostatic portion of the urethra by means of the cooling sound or psychrophor of Winternitz,³ represented in fig. 11, which is nothing

¹ Virginia Med. Monthly, 1879, p. 444.

² Ibid., p. 716.

³ Ziemssen's Hdbch. der Allg. Ther., Bd. 11, Theil 3, 1881, p. 238.

more than a double current eyeless catheter closed at its beak. To the proximal extremities of this rubber tubes are attached, through one of which the fluid flows into, and

Fig. 11.



Winternitz's psychrophor.

through the other out of, the instrument. The former, provided with a stopcock, is connected with a rubber bag suspended a few feet above the patient, while the latter is received in an empty vessel placed at the patient's feet. At the outset the temperature should be about 57° F., and be gradually reduced to 52° F., and the sittings be lengthened from five to ten minutes. The device has been found to be the most beneficial when the ejaculations are too precipitate.

Galvanism very deservedly enjoys a high reputation in the treatment of impotence. Not only are the electrotonic effects of the constant current valuable in increasing the excitability of the genito-spinal centre, but galvanization is far more serviceable in restoring the tonicity of the arterioles of the erectile tissues of the penis, and in increasing the amount of blood flowing in them, than are the measures to which I have just alluded. Although the dose of the current cannot be accurately prescribed by the number of elements of the battery, the quantity generated

by from fifteen to twenty cells will, as a rule, be found to answer the purpose. The anode, or positive electrode, which should be of large size, is placed over the lumbar spine, and the cathode carried over the gland and back of the penis, the cords, testes, and perineum. The sittings at first should be limited to two or three minutes every forty-eight hours; but they may soon be lengthened to five minutes daily. In obstinate cases, particularly if they are complicated by prostatic or seminal discharges, an insulated catheter negative electrode may be passed down to the prostatic urethra, while the anode is applied to the back, groin, or perineum, or it may be replaced by the rectal reophore. Great caution must, however, be observed in the employment of the urethral electrode, lest it awaken inflammation of the urethra, or neuralgia of the testis or cord, or even induce suppuration of the testis, as I have known to happen in one case from the use of too strong a current. In all cases it will be wise for the operator to begin with from three to five cells, and to test the current by passing it through his own temples, and cautiously to increase the number of elements to fifteen,¹ if pain is not excited. In the third or paralytic variety of the affection, or in the other varieties, if galvanism does not bring about the desired result, faradization of the erector muscles of the penis and the accelerator muscle of the urine is frequently highly serviceable. If this method fails, the interrupted current may be passed through one reophore in the urethra to the other, placed on the perineum and the genitalia, or inserted in the rectum; while some cases will improve more rapidly, if local faradization

¹ Althaus, Medical Electricity, 3d ed., p. 671.

and galvanization of the cord are employed on alternate days. When the skin of the penis is deficient in sensibility, the electrical brush is indicated. Central galvanization¹ and general faradization are beneficial when the symptoms are those of cerebral and spinal exhaustion.

In addition to the foregoing measures, a change of air, travel, exercise, amusement, sea-bathing, good food, and a glass of generous wine will do much to give tone to the parts, and the system at large.

The end having been accomplished, it remains to put the patient on his guard against marital excess, for unless he practises moderation he is liable to a relapse. In a large proportion of cases the trouble is met with in young men who are engaged to be married. Under these circumstances, matrimony should not be delayed, as regular and temperate intercourse tends to promote sexual quietude. When marriage is not contemplated, the patient should lead a continent life, and avoid all sources of sexual excitability.

B.—ATONIC IMPOTENCE WITHOUT HYPERÆSTHESIA OF THE
PROSTATIC URETHRA.

Imperfect or deficient erection may arise independently of any lesion of the prostatic portion of the urethra in persons of nervous or sensitive temperaments, a class of subjects in whom diminished reflex excitability of the lumbar genital centre appears to be induced before pros-

¹ Beard and Rockwell, *Med. and Surg. Uses of Electricity*, 3d ed., p. 376.

tatic inflammation has had time to declare itself. In the preceding form of impotence the patients are, as a rule, robust and strong, and inflammation and hyperæsthesia of the deep urethra are set up before the functions of the genital centre have been much impaired.

Of the twelve cases that have come under my notice, eight were due to excessive masturbation, two to gonorrhœa and masturbation, and two to gonorrhœa alone. In nine a stricture was detected, while three were free from that complication, and the prostatic portion of the urethra was not morbidly sensitive in a single one. In eight of the cases the erections were feeble, and the ejaculations were precipitate; and in four intercourse was impossible, although desire was retained.

The treatment of this variety of atonic impotence is the same as that directed for the preceding form after the hyperæsthesia has been remedied.

SECT. III. PSYCHICAL IMPOTENCE.

Impotence from the restraining or inhibitory control of the brain over the genito-spinal centre is infinitely less common than the preceding variety; but that erection may fail or cease under the influence of excitement, depressing, or other emotions, or mental preoccupation, is a fact with which every one is familiar. Thus newly married men, who were previously potent, and had never indulged in sexual or unnatural excesses, are liable to be

troubled in this way, the undue stimulation of the passions at their first efforts at coition having the effect of causing the erection to cease before the act is completed, or of rendering it so feeble that penetration is impossible, or of precipitating emission, or of preventing erection altogether. Grimaud de Caux¹ relates the case of a mathematician in whom erection failed before emission, because his thoughts wandered towards the solution of an abstruse problem. Onimus and Legros² refer to a young man who remained impotent for years after having been surprised at the moment of connection by the husband; and Robaud³ met with a man who had been unable to command an erection during the six months following a railway accident in which he was terribly frightened. The death of a beloved child or wife, as in the cases of Robaud⁴ and Ultzmann,⁵ may occasion temporary impotence; and the loss of a large sum of money,⁶ or the drawing of a prize in a lottery,⁷ may bring about the same result. In other cases, the impotence is, in regard to certain women, due to indifference, repugnance, or a suspicion of infidelity.

Impotence is very frequently entirely imaginary or mental, although it is based upon existing lesions. Thus too small a penis, occasional nocturnal seminal losses, stricture of the urethra, a tight prepuce, varicocele, a gleety discharge, or irritability or neuralgia of the testis, not infrequently restrain erection through fear of inability to

¹ *Physiologie de l'Espèce*, p. 341.

² *Traité d'Electricité Médicale*, p. 215.

³ *Traité de l'Impuissance et de la Sterilité*, t. i. p. 186.

⁴ *Op. cit.*, p. 433.

⁵ *Wiener Klinik*, May and June, 1879, p. 131.

⁶ *Ibid.*

⁷ Robaud, *op. cit.*, p. 186.

penetrate, or of increasing the pollutions, or of impossibility of ejaculating, or of aggravating the local troubles. The same statement is true of moderate masturbators, who probably have normal nocturnal emissions which they assume to be or have been informed are indicative of a diseased condition, and who seem to regard impotence as a heritage of their vice. In not one of these conditions is there any valid reason for the trouble, but it has been ignorantly brought on by the constant thought that impotence was the natural result of the supposed infirmities.

I have already alluded to the fact that young husbands, in their eagerness to consummate the rite, not infrequently fail; and I fancy that there are few men who did not ejaculate prematurely when they had connection for the first time. In such cases, the repetition of the act soon corrects the trouble. Most writers on impotence, however, teach that it is not uncommon for newly-married men to be baffled, simply because they are afraid that they cannot accomplish the act properly, or because the mortification which results from the unfortunate attempt gives rise to so much distress and anxiety in regard to its recurrence that the otherwise healthy subjects are really rendered impotent. I am no believer in this doctrine, which is as false in fact as it is pernicious in regard to the treatment which such cases demand; but I do believe that this condition arises from overlooked lesions of the prostatic urethra which were induced, as a rule, by masturbation. An examination of the views of writers on this subject, as, for example, Van Buren and Keyes,¹ Curschmann,² Rosen-

¹ Genito-Urinary Diseases, with Syphilis, p. 453.

² Ziemssen's Cyclopædia, vol. viii. p. 892.

thal,¹ and Ultzmann,² will show that nervous or psychical impotence is usually met with in masturbators, subjects who are always more or less timid as to their virile powers, and many of whom are incapable of normal sexual excitement. Instead of accepting the statements of these patients, that their failure was due to natural impetuosity, timidity, or want of self-confidence, it will be wise for the surgeon to explore the urethra, since, as I have already indicated, onanism is the most fruitful source of inflammation and hyperæsthesia of the prostatic portion of the urethra, a view in which I am sustained by Rosenthal, Ultzmann, Black,³ Acton,⁴ and nearly all surgical authors. Hence, the failure to copulate in this class of patients is due to diminished reflex irritability of the centre for erection, although it is possible that undue excitement or timidity may aggravate that condition by exerting an inhibitory influence over the centre. Such cases should, therefore, be relegated to the preceding or atonic variety of impotence.

The only case of psychical impotence that I have ever met with is the following:—

CASE XVII. A widower, fifty-two years of age, was engaged to be married, and, despite the fact that he had erections in the presence of the object of his affection, he was so fearful that he would disgrace himself on the night of his wedding, that he made

¹ Wiener Klinik, May, 1880, p. 137.

² Ibid., May and June, 1879, p. 130.

³ On the Functional Diseases of the Renal, Urinary, and Reproductive Organs. Phila., 1872, pp. 229 and 269.

⁴ The Functions and Disorders of the Reproductive Organs. 2d Amer. ed., pp. 91 and 240.

the experiment with another woman, and utterly failed. As a consequence of this unfortunate test, he constantly brooded over his imaginary trouble, for which he sought my opinion. I found that his genital organs and prostatic urethra were perfectly normal, and succeeded in obtaining his confidence by assuring him that I had met with many cases of a similar nature, and that they had always yielded readily to teaspoonful doses of fluid extract of damiana taken every eight hours for three days before marriage. As a result of this ruse, he subsequently wrote me that the remedy had acted like a charm.

The following would have been classified as cases of psychical impotence by physicians who are not in the habit of exploring the urethra in this and allied affections:—

CASE XVIII. A merchant, twenty-eight years of age, stated that he was suffering from spermatorrhœa, which had so weakened his powers that, on attempting intercourse four years previously, the erection was so feeble that it passed off before the completion of the act. He had not renewed the effort, as he was convinced that he was permanently impotent. I found that the so-called spermatorrhœa consisted in an intermittent discharge of prostatic fluid at stool, and in an occasional nocturnal emission, and that the man had had gonorrhœa three years before his first attempt at coition. A stricture, calibre 25, was detected at six inches from the meatus, the prostatic urethra was excessively sensitive, and the man had almost constant pain in the back.

CASE XIX. A lumberman, thirty years of age, consulted me on account of impotence, which he ascribed to undue size of his penis, as he found that on his first connection intromission was difficult, and ejaculation was precipitate and painful; and that on several subsequent efforts the erections did not come up to the proper standard. He had abstained from intercourse for about thirty months, as he was convinced that the trouble arose from the size

of the organ. He suffered from pain in the back, and weakness of vision, and informed me that he had masturbated from his fifteenth to his twenty-seventh year. There was a stricture, calibre 18, at six inches and a quarter from the meatus, and the prostatic urethra was morbidly sensitive.

CASE XX. A commercial traveller, thirty-six years of age, complains that he has been married for four days, but that he has been unable to consummate the rite, in consequence of the impossibility of intromission from insufficient erections. He has never had gonorrhœa, nor did he masturbate much in his youth; but during his engagement, which preceded his marriage by seven months, his genitalia were kept in a constant state of excitement by fondling the object of his affections, and he did not have illicit intercourse to relieve his passions. The entire urethra was exquisitely sensitive; but there was no evidence of a coarctation.

In the first two of the foregoing cases an inexperienced observer might readily have assumed that the trouble depended upon brooding over conditions which the patients thought had prevented natural copulation; and he might have ascribed the failure of erections in the third case to congenital deficiency, a variety of impotence which is described by certain authors, when the causes are inexplicable. In all of these examples, however, the failure of the first attempts was due to debility of the genital centre, a lesion of which the men were naturally entirely ignorant.

I have dwelt somewhat at length upon the erroneous diagnosis which is usually made in cases of so-called psychical or nervous impotence, in order that I might call attention prominently to the importance of examining the urethra in all examples of impotence, since the prognosis is far more favorable when the trouble depends upon hyperæsthesia of its prostatic portion than when that con-

dition is absent. Had this precaution been observed by many writers on the subject, they would have been able to give a less gloomy account of psychical impotence, and have said less of the importance of gaining the patient's confidence, and of the moral treatment adapted to each case.

TREATMENT.—In the management of psychical impotence from undue sexual excitement or emotional causes, little need be done, except to administer a placebo, with the assurance that it will afford relief, since such cases usually remedy themselves. In the case of Grimaud de Caux, the wife resorted to the stratagem of slightly intoxicating the husband before connection, through which he was rendered capable of procreating.

In the variety of mental impotence in which an existing lesion has thoroughly impressed the patient with the belief that it is the source of his trouble, the treatment usually advised, namely, to gain the man's confidence, is not easily carried out. Such patients are very watchful of themselves and of their physicians, and it is useless to try to convince them that a varicocele, for example, is productive of no harm, as far as the sexual functions are concerned, or that the involuntary emissions are strictly within the limits of health. Hence, it is far better to agree with them that their imaginary infirmities demand treatment, to assure them that they are capable of relief, and above all to institute the treatment laid down in surgical works, as it will be found that they are more or less familiar with the various maladies of which they complain. A tight or redundant prepuce should, therefore, be removed, and the introduction of bougies,

or local galvanization or faradization, or other measures be resorted to, along with a bitter tonic, and a systematic regulation of the diet, bathing, and exercise. The mind is open to persuasion in this way, but not by mere assurances, or by making light of the fancied disorder. If the subject is contemplating matrimony, he should be advised to fulfil his engagement; and a placebo, such as a minute quantity of phosphorus, or a drachm of the tincture of damiana, of the presumed virtues of which he will have some knowledge, should be administered at stated intervals for a few days previously.

SECT. IV. SYMPTOMATIC IMPOTENCE.

Sexual power is now and then greatly impaired, if not absolutely destroyed, by the prolonged use of certain cerebral sedatives, as opium, morphia, chloral, bromide of potassium, and alcohol, as well as of cerebral excitants, as cannabis indica, and by the administration of or exposure to arsenic, antimony, lead, sulphide of carbon, and iodine. All of these agents are capable of exerting a harmful influence upon the entire organism, but particularly upon the nervous system and the genital organs, when pushed to an undue extent.

The anaphrodisiac action of chloral, of bromide of potassium, and of spirituous and malt liquors is too well known to require illustration. Rosenthal¹ has recorded two cases

¹ Wiener Klinik, May, 1880, p. 149.

of impotence and azoospermism from the hypodermic injection of several grains of morphia daily; and Siredey¹ states that the habitual use of hashish by the Orientals induces absolute impotence early in life. Biett,² Charcot,³ Rosenthal,⁴ and Rayer⁵ have observed that sexual vigor diminishes and finally ceases with the increase of the dose of arsenic in the treatment of diseases of the skin; and Rosenthal⁶ observed the same effect in a merchant who resided in a room covered with arsenical paper. Lohmerer⁷ witnessed impotence in four men who were exposed to the fumes of antimony; and the absorption of the vapor of sulphide of carbon by workmen engaged in the manufacture of vulcanized caoutchouc is said by Delpech⁸ to be followed by loss of virility. Lead poisoning may cause temporary impotence, as in the cases recorded by Siredey,⁹ Portal,¹⁰ Roubaud,¹¹ and Rosenthal;¹² and Bartholow¹³ thinks that the prolonged use of the iodides has resulted in permanent loss of the sexual power.

Impotence is not an uncommon secondary effect of injuries of the brain and spinal cord; and it may also be symptomatic of various functional disorders and of acute and chronic affections, but particularly of the nervous, digestive, and urinary systems, as spinal irritation and weak-

¹ Dict. de Méd. et de Chir. Prat., t. xviii. p. 456.

² Ibid.

³ Bull. de Thér., Jan. 1864, p. 529.

⁴ Loc. cit., p. 151.

⁵ Ibid.

⁶ Ibid., p. 152.

⁷ Orfila, Traité de Toxicologie, t. i. p. 650.

⁸ Dict. de Méd. et de Chir. Prat., t. xviii. p. 456.

⁹ Ibid., p. 455.

¹⁰ Cours d'Anat. Méd., t. v. p. 434.

¹¹ Op. cit., p. 303.

¹² Loc. cit., p. 153.

¹³ *Materia Medica and Therapeutics*, 3d ed., p. 189.

ness, spinal meningitis and myelitis, locomotor ataxia, progressive muscular atrophy, dyspepsia, saccharine diabetes, and albuminuria. I have myself met with a case in a young man in which failure of erections was one of the earliest signs of diabetes, although the quantity of sugar in the urine was small, and the general powers of the system were not reduced. The grade of impotence in that affection, as Seegen¹ has demonstrated, is not dependent upon the amount of sugar excreted, as virility may not be impaired when the quantity is large.

In the preceding affections the form of impotence generally met with is the so-called irritable weakness, or the condition characterized by feeble erections and hasty ejaculations, which is soon followed by complete loss of erections with abolition of the sexual appetite.

PROGNOSIS AND TREATMENT.—When impotence arises from the excessive use of remedial agents, from saturation of the system with arsenic, lead, or other toxic substances, and from certain chronic disorders, the power of erection usually returns with the improvement in the symptoms; but when it depends upon injuries of the cerebro-spinal axis the outlook is unfavorable. When all signs of inflammation have subsided after disease or injury of the cord, and, in other cases, if the erections are insufficient after the cure of the original trouble, tonics, with a few drops of tincture of cantharides, or minute doses of phosphide of zinc, along with cold douches and galvanization of the spinal cord and testes, are indicated.

¹ Der Diabetes Mellitus, p. 112.

SECT. V. ORGANIC IMPOTENCE.

The power of sexual intercourse may be temporarily or permanently abolished in consequence of certain congenital or acquired malformations, injuries, or diseases of the external genital organs, through which penetration is rendered impossible, or in which the loss of erection depends upon arrested secretory activity of the testes.

A.—IMPOTENCE FROM ABNORMAL CONDITIONS OF THE PENIS.

a. The *malformations* of the penis, which prevent coition, are complete absence, a rudimentary condition, or division of the organ, of which vices of conformation examples have been recorded, respectively, by Goschler,¹ Fodéré,² and Förster.³ A double penis, as in the case observed by Van Buren and Keyes,⁴ may prevent intromission; but in the Portuguese, nineteen years of age, of whom Hart⁵ gives a full account, there was considerable virile power, and the left organ was used in coition.

β. *Variations in the size* of the penis are causes of relative impotence. In the case of Roubaud,⁶ in which the organ was only two inches long and of the circumference of the quill of a porcupine, its volume was increased and intercourse rendered practicable by a mechanical con-

¹ Prajer Vierteljahrsschrift, Bd. iii., 1859, p. 89.

² Médecine Légale, t. i. p. 360.

³ Klebs, Hdbch. der Path. Anat., p. 1132.

⁴ Op. cit., p. 5.

⁵ Lancet, vol. ii., 1865, p. 124.

⁶ Op. cit., t. i. p. 160.

trivance; while in the case of Wilson,¹ in which, at the age of twenty-six, the penis and testes were scarcely larger than those of a boy of eight years, the organs acquired the usual size in twenty-four months after marriage. Nothing can be done for the stunted penis which is associated with exstrophy of the bladder. The organ may also be unfitted for use by being partially or completely buried or concealed in a large scrotal hernia, hydrocele, or elephantiasis of the scrotum, from which it may be freed by appropriate operations, or by the application of a truss if the hernia be reducible. Extreme size of the penis may also involve relative incapacity for intercourse; and inordinate bulk from elephantiasis or morbid growths of the prepuce, gland, or body of the organ, or from urethral or preputial calculi, may prevent penetration. In these lesions the prognosis is usually favorable, even if the operations for their relief necessitate the removal of the entire gland. Loss of the penis through disease or through design is irremediable.

γ. Adhesion of the penis to the scrotum, the penis palmé of the French writers, in which the former is tied down by its under surface to the latter, and is frequently incurvated, is a rare cause of impotence, but is remediable. In the more simple form of the affection liberation of the organ may be effected by division of the web of skin. When, on the other hand, the union is more considerable, and the penis is curved downwards, the combined operation of Weir² and Bouisson³ holds forth excellent pros-

¹ Lectures on the Urinary and Genital Organs, p. 424.

² New York Med. Journ., vol. xix. p. 281.

³ De l'Hypospadias et de son Trait. Chir., t. ii. p. 536.

pects for a good result, and is described by the former surgeon in the following terms: "An incision was made on each side of the scrotum sufficiently free from the body of the penis to afford skin enough to cover the under surface when released, and the flaps were dissected up to the penis. This constituted the first step of the operation. The second consisted in separating the urethra, with the corpus spongiosum, from the corpora cavernosa as far back as the posterior margin of the scrotum. This required but a few cuts of the scissors, as the band was only about one inch and a half long, and produced no effect upon the curvature of the penis. On stretching out the curved organ, the septum between the corpora cavernosa could be easily felt as a tense, thickened band, and its division constituted the third step in the operation. It was accomplished by a tenotomy knife, introduced, however, not so far as described by Bouisson, and cutting freely the septum in its lower part and about half way between the glans and the scrotum. Immediately after this section was made, the curve was readily abolished, and the deformity thoroughly overcome. The transverse incision made involved, however, the tissues of both corpora cavernosa, and gave rise to persistent and troublesome oozing of blood, only arrested by a ligature placed around an acupuncture needle. The skin flaps were then united by a suture on the under surface of the penis, and the gaping edges of the scrotal wound brought together without tension; having, however, first carefully secured the mucous membrane of the urethra by fine sutures to the integument at the posterior angle of the wound, that is to say, at the junction of the scrotum with the perineum. The penis was laid against the abdomen,

without need of a retaining bandage, and cold water dressings were applied to the parts."

δ. *Distortion of the penis* may prevent copulation, and may be due to congenital or acquired affections of the corpus spongiosum or the corpora cavernosa.

1. The most common cause of unusual shape of the male organ, according to my observation, is *congenital shortness of the corpus spongiosum*, which acts like the string of a bow, and keeps the penis bent downwards towards the perineum. In a few examples, this is the only deformity; but in the majority there is a slight degree of hypospadias, and the gland is somewhat flattened. I have myself met with impotence from this cause in two instances, and have seen at least a dozen additional cases in the practice of Professor Gross and Professor Pancoast.

For the relief of this condition, the operation of cutting a wedge out of the corpora cavernosa, which was devised by Physick,¹ and which has been successfully practised by Gross, Pancoast, Furneaux Jordan,² of Birmingham, and myself, is attended with the most gratifying results. The skin of the dorsum of the penis, behind the gland, having been pinched up and divided transversely by transfixing its base, a V-shaped portion, embracing about two-thirds of the thickness of the corpora cavernosa, and of sufficient length to remedy the deformity, is excised by carrying the bistoury first from behind forwards, and then from before backwards, the second incision being made about a quarter of an inch behind the head of the penis.

¹ Gross's Surgery, 5th ed., vol. ii. p. 872.

² Lancet, vol. i., 1876, p. 169.

The arteries, two or three in number, having been secured by fine ligatures, the edges of the wound are approximated by three silver sutures, one of which is carried through the cut surfaces of the septum, and the other through the sides of the tunica albuginea, the edges of the wound of the skin being brought together separately. The penis is then supported upon a splint and kept covered with cold water, and the stitches are removed in eight or ten days. For some days previous to the operation, full doses of bromide of potassium should be administered, with the view to prevent erections.

2. Vicious direction of the penis is generally due to the formation of *circumscribed plates or lumps of induration in the erectile tissue and fibrous sheath of the corpora cavernosa*, an affection which was first described by La Peyronie,¹ and subsequently by Boyer,² Kirby,³ Johnson,⁴ Galligo,⁵ Cruveilhier,⁶ Gross,⁷ Hewett,⁸ Van Buren and Keyes,⁹ Curling,¹⁰ Scholz,¹¹ and other observers. The areas of induration are usually single, and confined to one of the cylinders, although, as in several examples recorded by Kirby and Galligo, they may be multiple, and be scattered throughout the organ; and, as in a case observed by

¹ Mém. de l'Acad. Roy. de Chir., t. i. 1819, p. 316.

² Traité des Mal. Chir., t. vi. p. 802.

³ Dublin Med. Press, Oct. 3, 1849, p. 209.

⁴ London Lancet, vol. ii. 1851, p. 481.

⁵ Gaz. Méd. de Paris, 1852, p. 440.

⁶ Anat. Path., t. iii. p. 593.

⁷ Op. cit., vol. ii. pp. 871 and 895.

⁸ British Med. Journ., Feb. 1872.

⁹ New York Med. Journ., vol. xix. p. 390, and op. cit., p. 24.

¹⁰ Op. cit., p. 462.

¹¹ Schmidt's Jahrb., Bd. cii. p. 33.

Curling, they may be associated with a similar lesion of the corpus spongiosum. Their consistence varies, but it is usually hard and cartilaginous. As the natural result of the obliteration of the meshes of the erectile tissue, the organ, during erection, deviates towards the lesion, so that it may be drawn upwards, downwards, or to either side, thereby materially interfering with coition, if not rendering that act impracticable. In one case reported by Van Buren and Keyes, the penis curved almost to a right angle, and in others it assumed a spiral form.

The affection is almost always met with after middle life, but its etiology is obscure. Of twenty-five examples which I have collated, in ten the cause could not be determined; in seven it was connected with the gouty diathesis; in four it resulted from injury during coition; in three it was ascribed to gonorrhœa; and in one it arose from a violent erection. Kirby, Curling, and Hewett believe that it is connected with gout; Gross has met with it most frequently in men who have committed venereal excesses; while others think that it usually arises from extension of gonorrhœal inflammation.

Of the intimate nature of the lesion, nothing is accurately known, as the condition has not been verified by post-mortem inspection. Hewett supposes that the nodules arise from clots of blood in the meshes of the corpora cavernosa; Van Buren and Keyes think that they depend essentially upon chronic inflammatory plastic obliteration of the meshes; and Klebs¹ teaches that they are the result of a combination of inflammation and thrombosis.

¹ Hdbch. der Path. Anat., p. 1152.

ε. Closely allied to the preceding affection is *cicatricial induration of the corpora cavernosa*, the effect of injury, abscess, or destructive inflammation. Thus, Curschmann¹ relates a case of upward and lateral deviation of the penis from an induration resulting from forcing the erect penis downwards. Baudens² records an example of gunshot wound of one corpus cavernosum, with lateral curvature. Johnson³ met with an instance of distortion from abscess of the right corpus cavernosum; and he also describes a case in which the glans penis came in contact with the left side of the pubes from burrowing phagedæna.

ζ. *Gummata of the corpora cavernosa*, of which condition Ricord⁴ has given a good description, are not infrequently attended with faulty curvature of the penis; but, as they do not evince any tendency to break down, they are indistinguishable from the patches of induration resulting from other causes.

η. *Calcification of the septum pectiniforme, or the corpora cavernosa* may give rise to impotence from upward or downward curvature of the penis. In the case of a man, fifty-two years of age, McClellan⁵ relieved the deformity by removing a so-called ossified septum by an incision which extended throughout the entire length of the organ; and Regnoli⁶ also restored the power of normal erection

¹ Loc. cit., p. 886.

² Clinique des Plaies d'Armes à Feu, p. 408.

³ Loc. cit., p. 574.

⁴ Bumstead and Taylor, Venereal Diseases, 4th ed., p. 639.

⁵ Lancet, vol. i., 1828, p. 714.

⁶ Petrequin, Brit. and For. Med. Rev., vol. xx. p. 136.

by excising the ossified portion, which did not include the entire thickness of the cylinders.

When distortion of the penis arises from gummata, the prospect of relief from the administration of iodide of potassium and bichloride of mercury, and from friction with mercurial ointment, is favorable. The induration resulting from laceration, or so-called fracture, of the corpora cavernosa is irremediable. The prognosis in circumscribed patches of these bodies is notoriously unfavorable, as the only cure from general measures, of which I have any knowledge, is that obtained by Scholz by the application of tincture of iodine, plaster of Vigo, and warm douches; although Curling¹ records a case in which the hardness nearly disappeared, and in which the erections were almost normal, by the internal administration of biniodide of mercury and by the local use of tincture of iodine. In a case narrated by Friedberg,² an induration of the corpus cavernosum as large as a hazel-nut was made to disappear by inserting a seton under the skin, and permitting it to remain in contact with the tunica albuginea for one month. Boyer and Gross recommend excision of the patches, a practice which I myself would follow if they were single, and of moderate volume. When the curvature depends upon calcification of the corpora cavernosa or its septum, the outlook is far better, since the removal of the offending substance, as in the cases of McClellan and Regnoli, is followed by the most gratifying results. After a shot wound of the right corpus cavernosum, which terminated in a hard, depressed, and adherent cicatrix,

¹ *Op. cit.*, p. 464. ² *Prajer Vierteljahrsschrift*, Bd. i. 1862, p. 20.

Baudens succeeded in effecting a cure by making two incisions in the opposite cylinder, on a level with the upper and lower extremities of the scar, and exciting suppuration by the insertion of tents, through which manœuvre a compensating induration was obtained, and the curvature was remedied.

θ. The power of erection may be lost in consequence of the permanent *retention of a ball in the corpus cavernosum*, of which curious condition I have recorded an example.¹ The missile was encysted in the right cylinder, and its point presented towards the pubes, from which it was separated about one inch; but the man refused to have it removed.

ι. Impotence may depend upon congenital or acquired *shortness of the frenum*, through which the head of the penis is distorted; and coition is abstained from on account of the suffering with which the act is attended. The proper remedy is division.

κ. Finally, insufficient erections are occasioned by *varix of the dorsal vein* of the penis. In a case of this description, Parona² effected a rapid cure by the intravenous injection of equal parts of chloral and water; and Bartholow³ states that he has obtained excellent results from the hypodermic injection of ergotine in the immediate vicinity of the enlarged and tortuous vein.

¹ Med. and Surg. Hist. of the War of the Rebellion, Part II., vol. ii. p. 345.

² Annales de Derm. et de la Syph., t. v. p. 453.

³ Op. cit., p. 295.

B.—IMPOTENCE FROM DEFECTS AND DISEASE OF THE TESTES.

α. Congenital bilateral anorchidism, or absence of the testes, of which condition examples are quoted in the chapter on sterility, is necessarily attended with absolute impotence. *Cryptorchids*, or persons in whom the organs are retained in the abdomen or the groins, are on the other hand generally potent, although they are only exceptionally fertile; and arrest of development, as a rule, diminishes virility.

β. Loss of the testes from disease, self-mutilation, or surgical interference is presumptive of inability to copulate, although in exceptional cases the erections may continue for a considerable time, as is exemplified in the following instances.

Sir Astley Cooper removed the testis of a man two years after the other had been excised. For the first twelve months he had connections. At the end of two years the erections were more rare and imperfect, and they usually ceased under attempts at congress. Ten years subsequently he stated that he had had intercourse only once during the previous year; and twenty-eight years after the operation the penis was shrivelled and wasted, and for many years coition had been impossible.

Mr. Wilson¹ removed both testes for malignant disease, and the man survived the operation two years. He had occasional erections, and intercourse was attended with the usual feeling and with the ejaculation of some fluid.

¹ Lectures on the Urinary and Genital Organs, p. 133.

Professor Humphry¹ met with a man who had submitted to castration on account of nervous troubles, but who was able to have connections with an emission for more than a year, although less frequently than before the mutilation.

Mr. Curling² removed the right testis of an officer seven years after the excision of the left testis by another surgeon. At the expiration of four years and a half from the operation the officer informed Mr. Curling that he had intercourse with his wife about once a fortnight, but without an ejaculation.

γ. *Progressive atrophy of the testes* is very liable to be attended with impotence; and Liégeois³ found that the power of erection was diminished in four cases out of six of atrophy of one organ.

δ. *Bilateral syphilitic orchitis* generally involves impotence;⁴ while of forty-one examples of *double epididymitis* analyzed by Liégeois⁵ and Gosselin⁶ virility was diminished in only eight.

ε. *Tumors*, as carcinoma, and sarcoma, and *tubercle*, when they completely destroy or disorganize the parenchyma of the testes, are also attended with impotence; but the statement does not hold good when one organ alone is affected.

¹ Holmes's System of Surgery, 2d ed., vol. v. p. 160.

² Op. cit., 4th ed., pp. 307 and 450.

³ Annales de Derm. et de la Syph., t. i. p. 437.

⁴ Liégeois, loc. cit., p. 431.

⁵ Ibid., p. 424.

⁶ Archives Générales, sér. 5, t. ii. p. 267.

The power of erection after having been lost may usually be restored, when it depends upon syphilitic orchitis, by mercurial inunctions and the exhibition of iodide of potassium and bichloride of mercury. Arrest of development of the testes is sometimes overcome by the influence of sexual desires, as in the interesting example recorded by Wilson,¹ in which, at the age of twenty-six, the glands were not larger than those of a child, but in which they increased almost to the volume of those of an adult man two years after marriage. In all the remaining causes of impotence from lesions of the testes the trouble is beyond relief.

¹ *Op. cit.*, p. 424.

CHAPTER II.

STERILITY.

SECT. I. GENERAL OBSERVATIONS.

THE generative act on the part of the male implies the completion of sexual congress with an ejaculation of fertile semen, and its deposition in the upper part of the vagina. As we have already seen, the capacity for copulation depends upon the perfect erection of the penis, the failure of which renders the man sterile from impotence. Sterility, on the other hand, not only does not include impotence, but is usually met with in subjects who are vigorous in intercourse, and who ejaculate a fluid which, in the absence of minute examination, presents all the properties of normal semen. Hence it is difficult for these subjects to realize that they are the cause of barren marriages.

For a proper understanding of the alterations which the semen undergoes in disease, I consider it requisite to preface the consideration of sterility with a summary of the most important attributes of the normal fluid.

Semen is the mixed product of the secretions of the testes, vasa deferentia, seminal vesicles, sinus pocularis, prostate, Cowper's glands, and the mucous follicles of the urethra. The thick, white, pasty secretion of the seminiferous tubes consists mainly of spermatoblasts, or seminal cells, out of which the spermatozoa, or fertilizing elements, are developed; but the spermatozoa first make their appearance in the rete testis, and constitute at least

nine-tenths of the glutinous mass. In the epididymes and vasa deferentia the zoosperms are perfectly motionless from the density of the medium in which they are contained; but when they have reached the seminal vesicles they are in active rhythmical undulating motion. These facts are noticed because some authors have erroneously based their conclusions in regard to the productiveness of the semen upon minute examination of the parenchyma of the testes and the epididymes, or situations in which spermatozoa are only forming, or in which they have as yet not acquired mobility.

The fluid contained in the seminal vesicles is odorless, viscous, and colorless, resembling fresh honey, heavier than water, of neutral reaction, and does not coagulate. When, however, it is incorporated with the secretions of the prostatic and urethral glands, semen has an albuminous consistence, a whitish or opalescent tint, and an alkaline reaction, and it emits a peculiar faint odor which is not unlike that of the raspings of fresh horn or bone. After ejaculation it is transformed into a gelatinous mass, but it becomes more fluid after exposure to the air for a few minutes.

From the preceding considerations it is obvious that, while the testes furnish the fecundating elements of the semen, the secretions of the associated glands, and particularly the secretion of the prostate, not only render it more thin and abundant, but also impart to it its color, odor, alkalinity, and coagulability. The prostatic fluid, moreover, has a more important function than that of serving as a vehicle for the transmission of the spermatozoa to the uterus, since Kraus¹ has shown that, in its

¹ Medical Times and Gazette, vol. i., 1871, p. 170.

absence, these bodies cannot live in the uterine mucus, but that, with its aid, they often survive more than thirty-six hours, or even for eight days and a half, as has been demonstrated by Percy,¹ of New York.

As early as 1856 Dr. Marris Wilson² assigned the same purpose to the secretion of the prostate, and regarded the neutral phosphate of lime contained in that fluid as the element upon which the vitality of the spermatozoa depends, since it protects them against destruction by the too acid or too alkaline conditions of the secretions of the passages through which they have to pass in their progress to the ovum.

If the ejaculated semen be permitted to stand in a test tube for a few hours, it will separate into two layers, of which the upper one, or the liquor seminis, is thin, whey-like, and transparent, and contains a few epithelial cells derived from the seminal passages and detritus, while the lower one is thick, white, opaque, and consists of spermatozoa. From the thickness of the sediment, and the rapidity of its precipitation, Ultzmann³ states that a conclusion may be drawn in regard to the number of spermatozoa in any given specimen, as will be pointed out in the consideration of azoospermism from abnormal conditions of the semen.

A drop of semen discloses under the microscope, as in fig. 12, the male elements of generation, or spermatozoa, which are constituted by a pyriform, flattened head, an intermediate portion, or the beginning of the tail, and a

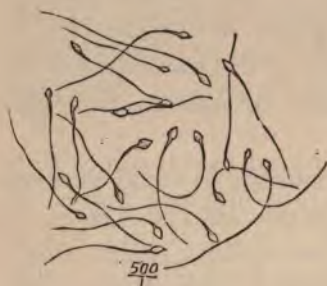
¹ Sims, *Uterine Surgery*, p. 374.

² *Lancet*, vol. ii., 1856, p. 483.

³ *Wiener Klinik*, May and June, 1879, p. 153.

long, tapering, filiform tail, which is in rapid undulating motion, and which propels the head directly forwards. These movements should continue at least twelve hours after the fluid is ejaculated. If they are wanting, and

Fig. 12.



Spermatozoa.

Fig. 13.



Spermatic crystals.

the spermatozoa are alive, as may happen when the semen is too thick, motion may be excited by the addition of weak alkaline solutions; but if they remain motionless under this treatment they are incapable of impregnating the ovum.

Minute examination of semen which has been allowed to dry on an object glass, or of the lower layer which forms after the secretion has stood for some time, shows, on the second or third day, at first a few and later a considerable number of transparent, variously modified rhombic prisms with their bases in apposition; the ends of these occasionally terminate in fine points, but usually in rhombi, as in fig. 13. They were discovered by

Van Deen¹ and Boettcher,² the latter of whom termed them spermatic crystals, and regarded them as being composed of albumen. Ultzmann, however, says that they consist of phosphate of magnesia, while other observers regard them as being composed of ammonio-magnesian phosphate, a view in which I coincide, and which is verified by fig. 16. Ultzmann³ has directed attention to the fact, which has been confirmed by Rosenthal's⁴ and my own investigations, that the early and abundant formation of these crystals denotes a diminution of the number of the spermatozoa or their entire absence; and Fürbringer,⁵ from an examination of the contents of the seminal vesicles and the prostatic fluid of fifty-six bodies, and of the prostatic secretion derived from twenty healthy persons, has demonstrated that the crystals occur exclusively in the latter, and that they indicate functional activity of the glands of the prostate.

Semen begins to be secreted at the epoch of puberty, and continues to be formed until an advanced age, although the sexual power is usually lost after the sixty-fifth year. Liégeois⁶ examined the ejaculated fluid of eight young persons, and found abundant spermatozoa in two at fourteen years, in four at sixteen years, and in two at eighteen years. Previous to the researches of Duplay⁷ in 1852, and of Dieu⁸ in 1867, the opinion was very

¹ Ctrbl. für die Med. Wiss., 1864, p. 355.

² Virchow's Archiv, Bd. xxxii. p. 535.

³ Loc. cit., p. 154.

⁴ Wiener Klinik, May, 1880, pp. 137, 139, and 149.

⁵ Ctrbl. für die Med. Wiss., 1881, p. 19.

⁶ Medical Times and Gazette, vol. ii., 1869, p. 247.

⁷ Archives Générales, sér. 4, t. xxx. p. 385.

⁸ Journ. de l'Anat. et de Phys., 1867, p. 449.

general that the semen of old persons was as infertile as was that of impubic boys, although Wagner¹ had noted the presence of spermatozoa in sexagenarians and septenarians, and Curling² and Casper³ had met with them, respectively, at eighty-seven and ninety-six years. That old men in the enjoyment of good health are as able to produce zoosperms as younger men is shown by the investigations of Liégeois,⁴ who discovered them in every examination, thirteen in number, of the fluid emitted by that class of persons. When death, however, occurs from decrepitude, or without any organic lesions except those which are common to advanced age, Dieu found that the fluid of the seminal vesicles contained spermatozoa in only six, or twenty-three per cent., of twenty-three examinations. From these observations we may conclude that the secretion of semen continues to be formed in healthy old men, but that it is very liable to cease in decrepitude. These facts and the production of semen in disease will receive full attention in the succeeding section.

CLASSIFICATION.—Sterility includes, first, azoospermism, or the condition in which either no semen whatsoever, or unproductive semen, is secreted; secondly, aspermatism, in which spermatie fluid is not ejaculated; and, thirdly, misemission, or the failure to deposit fertile semen in the upper portion of the vagina. In the first variety intercourse and ejaculation are natural, but the essential anatomical elements are absent or dead, either because they

¹ *Histoire de la Génération*, p. 31.

² *Op. cit.*, p. 432.

³ *Forensic Medicine*, Syd. ed., 1864, p. 292.

⁴ *Loc. cit.*, p. 247.

are not formed or are imprisoned behind an obstacle seated in the epididymes or vasa deferentia, or because they are unable to live in the medium in which they are suspended. In the second variety the ability to copulate is unimpaired, but the power to ejaculate is prevented by an impediment situated between the seminal vesicles and the urinary meatus. In the third variety coition and emission are perfect; but fruitful semen fails to reach its proper destination, in consequence of congenital deficiencies of the urethra, or of fistulous openings in that canal resulting from inflammation, or of abnormal positions of the meatus.

RELATIVE FREQUENCY.—It is not at all uncommon for physicians to assume that a man who is potent, and who is able to ejaculate, is capable of procreating. As a result of the omission to examine the emitted fluid, and carefully to explore the male organs, little is known of the relative frequency of sterility in the two sexes; and gynecologists, with the exception of those mentioned below, do not appear to have made any contributions to the solution of this important subject. I have been able to collect one hundred and ninety-two cases in which examination of both the husband and the wife demonstrates that the former was at fault in thirty-three, or in seventeen per cent. Of this number Manningham¹ records one in thirty; Pajot¹ seven in eighty; Mondot one in ten;¹ Kehrer² fourteen in forty; Courty³ one in ten; Noegge-

¹ Wiener Med. Blätter, 1879, pp. 1223 and 1271.

² Beiträge zur Klin. und Exper. Geburtskunde und Gynækologie, Bd. ii. p. 76.

³ Wiener Med. Presse, 1880, p. 252.

rath¹ eight in fourteen; and I myself have found that the male was deficient in one example in eight. The cause of the sterility was azoospermism in thirty-one, and aspermatism in two. These facts show that the husband is at fault in about one case out of every six; and they convey information which should be carefully weighed before the practitioner even resorts to inspection of the female organs of generation.

SECT. II. AZOOSPERMISM.

Azoospermism may be due, first, to congenital bilateral anorchidism; secondly, to congenital bilateral deficiencies of the epididymis or vas deferens; thirdly, to cryptorchidism; fourthly, to affections of the testes; fifthly, to obliteration or obstruction of the epididymes or vasa deferentia; and, sixthly, to abnormal conditions of the semen. Hence, the affection may be congenital or acquired, and absolute or relative.

A.—BILATERAL ANORCHIDS.

Men born without testes are not only azoospermous, but, from the fact that the accessory secreting organs are rudimentary, they are unable to ejaculate a drop of any kind of fluid. From a study of four cases, Godard² found

¹ *Trans. Amer. Gynec. Soc.*, vol. i. p. 287.

² *Note sur l'Absence Congéniale du Testicule. Mémoires de la Soc. de Biologie*, 1859, p. 311.

that persons in this condition resemble eunuchs mutilated early in life. They have no venereal desire, and although they may have, as an exception, erections, they are absolutely impotent and sterile. It is important to bear in mind that a distinction may be made between anorchids and cryptorchids, when the testes are retained in the abdomen, as the latter are apt at coition, and emit a fluid which is, however, as a rule, devoid of spermatozoa.

B.—CONGENITAL BILATERAL DEFICIENCY OF THE EPIDIDYMS
AND VAS DEFERENS.

Double deficiencies of the excretory apparatus of the testes prevent the elimination of the secretion of the latter, and render them useless. Rhodius¹ met with an instance of absence of the epididymes in an adult; and John Hunter² dissected a body in which, while the testes were normal and were contained in the scrotum, the epididymes and vasa deferentia were deficient, and the seminal vesicles did not communicate with the urethra. Although the state of the genital functions in these cases must remain a matter of conjecture, there is no reason for believing that a mere deficiency of the excretory passages between the testes and seminal vesicles engenders impotence and incapability of ejaculation, provided the seminal vesicles, ejaculatory ducts, and the prostate are normal, as, under these circumstances, the condition would not be worse than that of imprisonment of the secretion of the testes by acquired obstruction of the vasa deferentia.

¹ Quoted by Godard in his *Note sur l'Absence Congéniale du Canal Excréteur et du Réservoir de la Semence, le Testicule Existant*. Ibid., p. 335.

² Works by Palmer, vol. iv. p. 23.

C.—FAILURE OF THE TESTES TO DESCEND INTO THE SCROTUM.

When the testes fail to descend into the scrotum, and are retained in the abdomen or the groins, they are generally small and undeveloped, and now and then atrophied through fibrous or fatty degeneration. As a result of these malpositions and morbid changes, cryptorchids were, up to a comparatively recent date, declared to be absolutely sterile, although they were known to enjoy the capacity for copulation and ejaculation. Opposed to this opinion, which was maintained by Follin,¹ Gosselin,² Godard,³ Liégeois,⁴ and formerly by Curling,⁵ are the instances recorded by Poland,⁶ Cock,⁷ Durham,⁸ and Debrou,⁹ of married cryptorchids who had procreated children. It is highly probable that fecundation in these cases was due to another source, a supposition which is strengthened by the fact that spermatozoa were not observed in the patient of Debrou after death from strangulated hernia, and that the ejaculated fluid does not appear to have been minutely examined in the others; and there is other evidence which proves that the retained testes may perform their functions. Thus, Beigel¹⁰ nar-

¹ Archives Générales, Ser. 4, t. vi. p. 257.

² Ibid. sér. 5, t. ii. p. 268.

³ Études sur la Monorchidie et la Cryptorchidie, p. 143.

⁴ Medical Times and Gazette, vol. ii. 1869, p. 248.

⁵ Brit. and For. Med.-Chir. Rev., April, 1864, p. 495, et seq.

⁶ Guy's Hospital Reports, sér. 2, vol. i. p. 162.

⁷ Curling, op. cit. 4th ed., pp. 470 and 471.

⁸ Ibid.

⁹ Ibid.

¹⁰ Virchow's Archiv, Bd. xxxviii. p. 144.

rates the case of a man, two-and-twenty years of age, whose testes were situated in the groins, and whose emitted semen disclosed spermatozoa; and Vallette¹ found those bodies in the vas deferentia of an inguinal cryptorchid.

On the whole, the evidence in regard to cryptorchids shows that while, as a rule, they are potent, and ejaculate a fluid which is devoid of spermatozoa, exceptional instances indicate that they may be fertile. This opinion is held by Casper;² but the question of fecundity should always be determined by microscopical examination of the ejaculated semen of such persons when they are contemplating matrimony.

D.—AFFECTIONS OF THE TESTES.

Disorders of the testes are liable to be accompanied with temporary or permanent absence of the spermatozoa. In six cases of bilateral atrophy Liégeois³ found that those bodies were greatly diminished; and they are not formed when the wasting is excessive. The only instances in which the semen has been examined in the latter condition, of which I have any knowledge, are three recorded by Curling,⁴ and one by Laborde and Cousrem;⁵ and spermatozoa were absent in all. Simple parenchymatous orchitis, and total disorganization of the substance of the testes, from whatever cause they may arise, are followed by absolute azoospermism. Partial

¹ Pitha und Billroth's Handbuch, Bd. iii., Abth. ii., Lief. 7, p. 419.

² Forensic Medicine, Syd. ed., 1864, p. 256.

³ Loc. cit., p. 541.

⁴ Op. cit., pp. 69 and 83.

⁵ Comptes Rendus de la Société de Biologie, 1859, p. 248.

destruction by malignant, tubercular, cystic, and other new formations, on the other hand, does not necessarily occasion sterility. Syphilitic orchitis, when pronounced, generally abolishes the functions of the organs, but spermatozoa may return under proper treatment. It need scarcely be added that loss of the testes, as from castration, renders the subject permanently azoospermous, although he may for a certain time ejaculate the fluid of the accessory glands, a phenomenon which is referred to on page 78.

Godard¹ has called attention to the singular fact, which he confirmed by examination of the ejaculated semen and of the contents of the seminal vesicles, that one tubercular testis renders the subject absolutely sterile; and, what is more astonishing, he found that the azoospermism preceded the development of the tubercular affection from one to two years. Hence he utilizes this condition for the differential diagnosis between unilateral tubercular orchitis and ordinary orchitis, in the latter of which fertile semen is secreted.

E.—BILATERAL OBLITERATION OF THE EPIDIDYMIS AND
VAS DEFERENS.

By far the most frequent and important of the causes of azoospermism is bilateral obliteration of the epididymis and vas deferens, through which the proper secretion of the testes is confined and is prevented from reaching the vesiculæ seminales and the urethra, and the ejaculated fluid is of necessity deprived of spermatozoa. Oblitera-

¹ Ante.

tion of the seminal passages, as Gosselin¹ first pointed out, is usually due to gonorrhœa, when it is, with few exceptions, confined to the epididymes, the vasa deferentia alone being rarely involved. I am not aware that it has ever been traced to traumatic inflammation, as wounds and contusions are generally limited to one side. Tubercular deposits in the epididymes not uncommonly occasion sterility; and a few examples are recorded of azoospermism from bilateral sarcomatous or carcinomatous degeneration of the epididymis. I have myself witnessed the same result in a case of double syphilitic epididymitis, the indurations having made their appearance on the seventy-second day after the first observation of the initial lesion.

A most important inquiry in connection with obliterations of the excretory apparatus of the testes is, whether the functional activity of the opposite gland is abrogated when the lesion is confined to one side. Liégeois² found in thirteen examinations of the discharge of persons affected with unilateral epididymitis that the number of spermatozoa was greatly diminished; and he refers to three cases of Hirtz, Duplay, and Gosselin in which the spermatic fluid was entirely devoid of those bodies. As the same occurrence is witnessed in tubercular epididymitis of one side, Liégeois believes, and Ultzmann³ agrees with him, that the testes are so closely united by reflex ties that unilateral epididymitis may abolish the functions of the opposite gland and thereby produce sterility. This conclusion is supported by five cases of unilateral

¹ Archives Générales, sér. 4, t. xiv. p. 406, and t. xv. p. 40, and sér. 5, t. ii. p. 257.

² Loc. cit., p. 541.

³ Wiener Klinik, 1879, p. 156.

epididymitis in which spermatozoa were entirely absent, recorded by Kehrer;¹ but it is utterly at variance with observations based upon analogous conditions. Duplay, for example, has recorded six instances of obliteration of one vas deferens with spermatozoa in the epididymis of the opposite side; and Godard shows that congenital absence of one excretory duct, or even of one testis, exerts no effect upon the generative functions.

In bilateral gonorrhœal epididymitis the inflammatory new material may be seated in the interior of the canals, in their walls, or in the interstitial connective tissue, and the resulting obstruction or induration is very liable to be permanent and incurable, since, of eighty-three cases recorded by Gosselin, Godard, and Liégeois,² the spermatozoa returned in only eight. The testes themselves continue to secrete and preserve their normal volume and appearances, and as the subjects ejaculate they are not aware that they are sterile. Liégeois found in twenty-one instances that impotence was present in eight; but of twenty cases observed by Gosselin all were thoroughly potent. The former³ states that the ejaculated fluid is rarely milky white, as in the normal condition, and that it possesses a yellowish tint when leucocytes are present in large numbers; while Gosselin⁴ could not trace any variations from the natural color, quantity, odor, and consistence. In a case of azoospermism from double epididymitis, Nepveu⁵ found that the discharge contained hyaline cylinders which were casts of the vasa deferentia,

¹ Op. cit., pp. 79 and 82.

² Loc. cit., p. 380.

³ Loc. cit., p. 511.

⁴ Archives Générales, sér. 5, t. ii. p. 267.

⁵ Gazette Médicale de Paris, 1874, p. 32.

and which frequently attained a length of from three to five centimetres.

F.—ABNORMAL CONDITIONS OF THE SEMEN.

The quality and composition of the ejaculated seminal fluid are liable to be materially altered by sexual excesses, by various exhausting diseases, and by inflammatory conditions of the epididymes, vasa deferentia, seminal vesicles, and prostate, which are entitled to a detailed examination.

α. Temporary absence of the spermatozoa may be induced, in perfectly healthy men, by *sexual excesses*, and the frequent repetition of the act of coition renders the semen more and more watery and scanty, so that it consists merely of the secretions of the accessory glands. In the case of a medical student, recorded by Liégeois,¹ who indulged in three or four connections daily for ten successive days, repeated examinations of the emissions demonstrated the complete absence of spermatozoa. Some months later, after an abstinence of three weeks, they were detected in large numbers. The case of Casper² is so interesting in this respect that it is quoted entire: "A vigorous naturalist, sixty years of age, a married man, and father of a large family, and accustomed to the use of the microscope, whom I had interested in this question, examined with me for some time continuously his own semen after coitus. Here we found the greatest variations, which were accurately noted by both of us together. After coitus on the third day,

¹ Loc. cit., p. 247.

² Op. cit., p. 292.

reckoning from the last performance of the act, there was a large number of very small spermatozoa; after renewed coitus on the fourth day, few and small; after a pause of only two days, none; after a pause of only one day there was only a watery sperma, in which no zoosperms were found. At another time, on the fifth day after the last coitus, the zoosperms were very numerous; another time, after a pause of six days, they were few, but large in size; four months after the last examination, and seventy-two hours after the last act, the zoosperms were comparatively very small, and at another time, on the third day after the last act, they were innumerable. Immediately after coitus, and before emptying the bladder, the urethra was twice examined. Twenty-four hours after the last act, a drop passed out of the urethra exhibited numerous small zoosperms; at another time, after a three days' interval, there was not a single zoosperm."

Permanent absence of the spermatozoa is said to occur now and then as an idiopathic affection. The only cases bearing upon this point, of which I have any knowledge, are those narrated by Hirtz.¹ Two young, robust, married, but childless men, performed coition with unusual vigor. The ejaculations were never followed by the sense of fatigue so generally experienced after intercourse, and the fluid was void of spermatozoa. While it is impossible to explain these cases satisfactorily, I am inclined to believe that the "unusual vigor" which they displayed points to their having indulged too often in proportion to their powers, and that they are to be classed among the cases of azoospermism from sexual excesses.

¹ Gazette de Strasbourg, No. 5, 1861.

β. One of the most common causes of infertile semen is *nervous exhaustion* or neurasthenia, attended with abnormal seminal and prostatic discharges, and with various degrees of impotence. This condition is usually brought about by onanism, venereal excesses, or ungratified desires, and may be regarded as an exaggerated or advanced stage of the preceding variety of azoospermism. As a result of impaired nutrition, induced by perverted innervation, the secretory activity of the testes is interfered with, and either the evolution of the spermatozoa is arrested, or their number and their activity are diminished. In addition to this factor, it is highly probable that the zoosperms are unable to exist in the altered prostatic fluid, since the microscope shows that they are motionless, and thereby confirms the view of Kraus and Wilson, to which allusion has already been made in the study of normal semen, that the vitality of the spermatozoa is dependent upon the presence of the healthy secretion of the prostate.

The investigations of Rosenthal,¹ Ultzmann,² and Curschmann³ demonstrate that, when potency is as yet little affected, and pollutions are merely beginning to overstep the natural limits, the ejaculated fluid is unchanged. When the pollutions are more frequent, and there are diurnal discharges, the spermatozoa are smaller and more scanty; their movements are less active than in the normal condition, are liable to be abolished in less than an hour, and are incapable of being reawakened by

¹ Wiener Klinik, May, 1880, p. 137.

² Wiener Med. Presse, 1876, p. 599.

³ Ziemssen's Cyclopædia, Amer. ed., vol. viii. p. 852.

alkaline solutions. Spermatic crystals, moreover, form more rapidly, and in greater abundance than in health. In the worst cases, or in those characterized by diurnal and nocturnal pollutions, and by the presence of semen in the urine, the spermatozoa are either entirely absent, or, if they are present, they are motionless, stunted, or variously deformed. In these advanced instances the semen is frequently seen to have undergone fatty degeneration, as indicated by granular epithelium, by molecular detritus, and even by oil globules in the protoplasm of the altered spermatozoa. Spermatic crystals are also abundant, and appear quickly.

These observations are in accord with those of Lallemand;¹ and I have been able to confirm them by the few examinations that I have made, to which I allude in the succeeding chapter, and of which the following case is a good illustration:—

CASE XXI. A commercial traveller, forty-five years of age, who had masturbated a great deal in his youth, and who had contracted gonorrhœa twenty years before I saw him, states that he has been constantly annoyed for the last two years by a discharge which is increased by straining at stool, and by toying with women without gratifying his passions, a practice in which he indulged, as he feared to have sexual congress on account of feeble erections. I detected a stricture, calibre 19, at five inches and a half from the meatus, along with a granular patch immediately behind the coarctation, and hyperæsthesia of the prostatic urethra. On withdrawing the explorer, the bulb brought away a considerable gelatinous discharge, which, under the microscope, presented a few pus corpuscles, granular epithelium and detritus, and a few motionless

¹ Op. cit., 3d Amer. ed., Phila., 1858, p. 265.

and deformed spermatozoa, several of which were occupied by fat globules. On examining the slide a few hours subsequently, I also discovered numerous spermatid crystals.

Fatty degeneration of the spermatozoa has also been observed by Bianchi¹ as rod-like bodies made up of shining points, which disappeared on the addition of ether.

In a case of impotence from masturbation, complicated by spermatorrhœa, Heitzman² found that the heads of the zoosperms were not much wider than the tails, and that their movements were very feeble.

γ. The relation of general diseases to anomalies of the semen is a subject in regard to which widely different views are entertained. While there is no reason for believing that acute maladies impair the fertility of the semen of adults, it is quite certain that both acute and chronic affections of old age, and chronic diseases in the adult not infrequently lead to a suspension of the evolution of spermatozoa.

The investigations in this direction have been confined almost exclusively to consumptives, in whom, as is well known, the parenchyma of the testes is usually very moist, pale, and anemic, and in whom the epithelium of the tubules has not uncommonly undergone fatty degeneration. The frequency of azoospermism in phthisis, despite the changed condition of the testes, has, however, been greatly exaggerated. Lewin,³ Davy,⁴ Duplay,⁵ and

¹ Schmidt's Jahrbücher, Bd. clxxxi., 1879, p. 38.

² New York Med. Journal, August, 1879, p. 158.

³ Deutsche Klinik, 1861, p. 319.

⁴ Edinb. Med. and Surg. Journ., July, 1839, p. 1.

⁵ Ante.

Dieu¹ examined the secretion of the epididymes, vasa deferentia, and vesiculæ seminales of thirty-five persons dead of pulmonary tubercle, and found spermatozoa in twenty-three, or 65.7 per cent.; and in thirteen inspections of the fluid at the orifice of the urethra, or pressed out of that passage, Lewin discovered zoosperms in eight. Hence, the semen contained fertile elements, and usually as numerous as in healthy persons, in thirty-one, or 64.5 per cent., of forty-eight subjects dead of phthisis; and what is remarkable is the fact that they were present in 62.5 per cent. of the semen of old persons, and in 65 per cent. of that of adults principally between thirty and forty years of age. Curling² was unable to detect spermatozoa in the fluid obtained from the substance of the testes and epididymes of the consumptive patients; but it is to be noted that the contents of the vesiculæ seminales were examined in only several of the cases, instead of in all. If these imperfect investigations be admitted into the inquiry, the ratio is reduced to 50 per cent.; but, even with this reduction, it will be seen that the semen of consumptives contains zoosperms far more frequently than certain writers would lead us to believe. Godard was of the opinion that spermatozoa were absent in persons who had become consumptive at the age corresponding to the establishment of the spermatic secretion; but that they persisted when tuberculosis began after that period.

That acute and chronic diseases do impair the fertility of the semen of persons advanced in life is well shown by the investigations of Duplay and Dieu, since of 156 in-

¹ Ante.

² Op. cit., p. 452.

stances in which the fluid contained in the vasa deferentia or vesiculæ seminales of old men was examined, spermatozoa were found only in one-half. Dividing the cases in accordance with the periods of life—

| | | | | | | | |
|---------------------|-------------|--------------------|-----|----|-----|-----|--------|
| Of 25 sexagenarians | spermatozoa | were discovered in | 17, | or | 68 | per | ct. |
| " 76 septenarians | " | " | " | " | 42, | " | 59.2 " |
| " 51 octogenarians | " | " | " | " | 19, | " | 37.2 " |
| " 4 nonagenarians | " | " | " | " | 0. | | |

In none were they present after the age of eighty-six, and they decreased *pari passu* with advancing years.

On analyzing the causes of death, I find that spermatozoa were entirely absent in affections of the urinary organs; that they were present in only 38 per cent. of diseases of the nervous system; and that they were discovered, respectively, in 68, 70, and 81 per cent. of disorders of the lungs, the digestive organs, and the heart. Hence, we may assume that while diseases of the kidney and brain exert a most prejudicial influence upon the formation of zoosperms, affections of the other great systems interfere with their development only to a slight extent.

Of the 78 cases in which spermatozoa were found, they were abundant in 50, and fewer than usual in 28. They were perfectly formed in 54; and in 24 their tails were absent or shortened, and they varied in size. From these facts we may infer that the inability of old men to procreate arises more from impotence than from the composition of their semen; and this view is supported by the fact, based upon 51 examinations made by Duplay¹ of the

¹ Archives Générales, t. vi., sér. 5, pp. 136 and 439.

testes of men from sixty to eighty-six years, that the secreting organs are perfectly normal in structure, and only slightly diminished in size and weight.

The gross appearances of the seminal fluid of old men are worthy of notice, since, in the absence of minute examination, they afford inferential aid in deciding the question of the absence or presence of spermatozoa. When the secretion is of a more or less transparent grayish tint, thick, viscous, and abundant, it is almost always fertile; but when it is scanty, and either watery or gelatinous, spermatozoa are almost always absent; and a deep brown color, which is due to broken-down blood and pigment, favors the latter view.

Constitutional syphilis appears to exert only a slight influence upon the secretion of the testes, since Liégeois¹ detected spermatozoa in the fluid ejaculated by fifteen syphilitic subjects, and Lewin² found them in three out of six examinations of the contents of the excretory seminal apparatus of men dead of that affection.

Under this head may be mentioned the altered composition of the semen produced by the *excessive use of morphia*, to which attention has been called by Rosenthal.³ A man had injected under the skin, on account of cephalalgia and insomnia, from nine to twelve grains of morphia daily for three years. Paralysis of the bladder finally ensued; and examination of the whitish fluid, which was occasionally forcibly expelled with the last drops of urine, demonstrated spermatie crystals, but no

¹ Loc. cit., p. 380.

² Loc. cit., p. 319.

³ Wiener Klinik, May, 1880, p. 149.

spermatozoa. Under proper treatment, at the expiration of a month, when the morphia had disappeared from the urine, a specimen of the semen ejaculated during coition was found to contain living zoosperms, but they were not so abundant or so lively in their movements as under normal circumstances. In a second case, in which nearly eight grains of morphia had been injected daily for one year, minute examination of a nocturnal pollution disclosed a few deformed and motionless spermatozoa, which did not react on the addition of a weak alkaline solution.

δ. *Abnormal density of the semen* may render it unfit for fecundation. Beigel¹ narrates a case in which the genital organs were normal, but in which repeated examinations of the ejaculated fluid showed that it was thicker and more viscous than is usual, and that the spermatozoa were motionless and closely grouped side by side. The addition of a few drops of tepid water put them in lively motion; so that the injection of a small amount of lukewarm water into the vagina, after coition, was advised, and the woman subsequently bore several children.

ε. *Purulent semen*, which is met with principally in inflammation of the seminal vesicles, epididymes, vasa deferentia, and prostate, may occasion the death of its essential anatomical elements, as in the following case, which is at present under my care:—

CASE XXII. A gentleman, thirty years of age, contracted gonorrhœa in 1870, or rather more than ten years ago, and at the end of six weeks was attacked by bilateral epididymitis, which confined him to his bed for a fortnight. Up to 1873 he had always

¹ Krank. des Weibl. Geschlechts, Bd. ii. p. 791.

had an ejaculation on coition, but during the succeeding two years he indulged so rarely that he does not remember whether he had a discharge or not. He married in 1875, and although he has always had good erections, intercourse was not completed with an emission; but by pressing along the course of the urethra he could force a drop of sticky fluid out of the meatus. Exploration discovered a stricture, calibre 14, at five inches and three-quarters, and great hyperæsthesia of the prostatic urethra. The seminal vesicles and prostate were tender on pressure with the finger in the rectum. Having detected these morbid conditions I learned, on further questioning, that intercourse was painful, and that there was a constant feeling of dull, heavy pain in the rectum which was increased at stool. On the 12th of January, 1881, he brought me the entire quantity of urine passed less than an hour after intercourse. Examination of the sediment, as well as of the discharge which I removed from the urethra with the bulbous explorer, disclosed rather abundant pus corpuscles and epithelial cells, with some of the latter undergoing fatty degeneration, crystals of oxalate of lime, spermatic crystals, and a few stunted or tailless and dead spermatozoa. The case was therefore one of sterility from aspermatism dependent upon stricture of the urethra, and of azoospermism from inflammation of the seminal vesicles.

Unilateral spermatocystitis may also prove destructive of the spermatozoa, since in a case recorded by Heitzman¹ they could be traced in all stages of transformation into pus corpuscles.

In a recent paper,² Terillon shows that the ejaculated fluid in acute bilateral gonorrhœal epididymitis is of a yellowish tint verging on green, and that while it contains abundant pus corpuscles and a few large granular

¹ New York Med. Journ., August, 1879, p. 158.

² Des Altérations du Sperme dans l'Épididymite Blennorrhagique, *Annales de Dermatologie et de Syphiligraphie*, sér. 2, t. i. p. 439.

corpuscles, spermatozoa are nearly always absent. Thus of twelve cases in which the semen was examined at from ten to ninety days after the implication of the second testis, or on the thirty-ninth day, on an average, there were no spermatozoa in eight, a few living ones in three, and an abundance in one. Even several years after the complete subsidence of the acute symptoms, when the epididymes and vasa deferentia are normal in volume and consistence, though tender on handling, the discharge may retain the same characters, but in a less pronounced degree; and Terillon illustrates this important statement by a case in which yellowish azoospermous semen, which contained relatively few pus corpuscles, continued to be emitted six years after the cessation of the inflammation. The man had been married four years, but had not procreated children. He also refers to a case of Marcé,¹ in which, after death, the seminal vesicle and vas deferens were filled with a purulent fluid, but in which there were no traces of spermatozoa; and he maintains, in a later publication,² that the absence of spermatozoa in cases of bilateral epididymitis depends more upon the persistence of catarrhal inflammation than upon obliteration of these bodies.

In the preceding examples it has been seen that the vitality and the changes in the form and dimensions of the essential anatomical elements of the semen were associated with purulent inflammation of the excretory passages of that fluid, so that the inference is justifiable that pus is destructive of their evolution and life. This

¹ *Gazette des Hôpitaux*, 1854, p. 59.

² *Bull. et Mém. de la Soc. de Chir.*, 1881, p. 159.

view is supported by the researches of Levy¹ on the influence exerted upon the viability of the spermatozoa by the perverted secretion of the glands of the cervix in endometritis. Of fifty-seven cases in which the secretion after coition contained an abundance of pus corpuscles and epithelial cells, in not a single one were many spermatozoa detected, and in none did their movements, which were feeble from the first, continue for more than five hours; whereas he frequently found that they were vigorous in the cervical mucus of healthy women for twenty-six hours after congress. In none of these cases were the phenomena to be ascribed to the reaction of the discharge. Sims² states that when the cervical secretion is rich in epithelial cells it proves destructive of the spermatozoa; and he ascribes this action to its density and not to its chemical action. He³ moreover thinks that catarrh of the prostate is as deleterious as is uterine catarrh; and there is, indeed, no reason why a muco-purulent discharge of the urethra should not kill the spermatozoa. Noeggerath⁴ believes that it acts as a poison; and in a letter which I recently received from him he says, "the poison in the secretion is certainly not the pus corpuscle, but the micrococci which infest, not only the leucocyte, but also the menstruum in which it is found;" and he refers me to a paper on the subject by Neisser, which, however, is not available. While these views are hypothetical, they are worthy of further investigation, as they would seem to be substantiated by a case of sterility from diabetes mellitus

¹ *Aerztliches Intelligenzblatt*, Bd. xxvi., 1879, pp. 3 and 12.

² *Uterine Surgery*, p. 390.

³ *New York Med. Journ.*, vol. viii. p. 407.

⁴ *Trans. Amer. Gynec. Soc.*, vol. i. p. 287.

recorded by Beigel,¹ in which examination of the semen contained in the urine disclosed, in addition to fragments of spermatozoa, abundant micrococci and a few cryptococci.

DIAGNOSIS.—The discrimination between anorchids and cryptorchids with the testes retained in the abdomen is readily made, when it is remembered that the former are impotent, while the latter complete the sexual act in the usual manner. If spermatozoa have never appeared in the discharge, the question of congenital absence of the epididymes, or of want of union of the vasa deferentia with the seminal vesicles or the epididymes, may be entertained.

In all other cases the diagnosis is to be established by repeated examinations of the semen, since, as we have already seen, that fluid is liable to undergo various changes in sterility from sexual excesses, masturbation, ungratified venereal desire, obstruction of the epididymes, prostatitis, spermatocystitis, and epididymitis. Normal semen slowly throws down a white sediment, which constitutes from one-third to one-half of the discharge, while azoospermous semen rapidly precipitates a slight sediment. Under ordinary circumstances, the formation of spermatic crystals is delayed until the second or third day after ejaculation, and their number is small. In semen deprived of spermatozoa, on the other hand, the crystals appear in half an hour; or somewhat later, if there are few spermatozoa. The earlier, therefore, a sediment is deposited, and the more rapidly and abundantly spermatic crystals form, the less fertile is the discharge.

¹ Krank. des Weibl. Geschlechts, Bd. ii. p. 791.

Ultzmann¹ describes the following varieties of semen in which spermatozoa are not found, and his observations are confirmed by others:—

First, watery, transparent semen, which is normal in quantity, and becomes gelatinous immediately after emission, as does the normal secretion. It, however, resumes its fluid state when it is thoroughly cooled, and presents a whey-like appearance. Its relatively slight sediment

Fig. 14.



Watery semen.

shows, under the microscope, as in fig. 14, perfect spermatic crystals, a few lymph corpuscles, cylinder epithelium, and an abundance of fatty detritus.

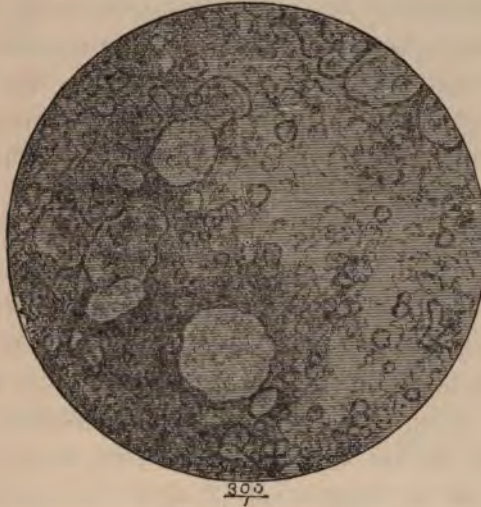
Secondly, colloid sperm, fig. 15, which differs from the normal discharge only in the absence of spermatic

¹ Wiener Med. Presse, 1876, p. 599, and 1878, p. 78; and Wiener Klinik, 1879, p. 156.

crystals and spermatozoa, and in the presence of abundant epithelium which has undergone colloid degeneration, and of laminated spherical masses of various dimensions.

Thirdly, catarrhal and purulent semen, which deposits a tolerably abundant whitish or yellowish sediment, is of normal consistence and quantity, and contains an abun-

Fig. 15.



Colloid semen.

dance of epithelium, leucocytes, and a few blood corpuscles, and occasionally a few deformed and motionless spermatozoa.

When the semen is discharged with the urine, it is to be remembered that the movements of the spermatozoa are arrested if the latter fluid is acid or ammoniacal; whereas they are not materially interfered with if the urine is neutral or slightly alkaline.

PROGNOSIS.—Azoospermism offers, in the large majority of cases, little encouragement as regards the prospect of permanent relief; and the prognosis depends upon its exciting cause and the amenability of the cause to treatment.

In congenital absence of the testes or deficiency of their excretory passages, cryptorchidism, progressive atrophy, parenchymatous inflammation, and total disorganization from tubercle and morbid growths, as well as in tubercle, sarcoma, and carcinoma of the epididymes, the absence of spermatozoa is, with few exceptions, permanent and absolute. In cases of arrest of development, the prognosis should be guarded, since the testes may resume their proper functions under amorous influences. Thus, in the remarkable example recorded by Wilson,¹ the penis and testicles of a man, twenty-six years of age, were not larger than those of a boy of eight years of age. He had never had sexual desires until he met his intended wife; and in two years after marriage he had become a father, and the organs had increased nearly to the usual adult size. The chances in favor of a return of the fecundating elements are good when the affection arises from sexual excesses, masturbation, or ungratified passion, over-indulgence in morphia, and epididymitis from ordinary causes; while they are not promising in cases of syphilitic epididymitis and orchitis, and in gonorrhœal epididymitis. Liégeois² examined the semen of twenty-eight persons affected with bilateral epididymitis, and there were no spermatozoa in twenty-one. Of the seven in which spermatozoa had returned, only two were of gonorrhœal origin; so that the prognosis is

¹ Lect. on the Urin. and Gen. Organs, p. 424.

² Loc. cit., p. 380.

far more favorable when the induration depends upon common causes than when it follows blennorrhagia. In the gonorrhœal cases with a return of zoosperms, the induration lasted only ten days in one, and in the other only one side was seriously affected; while in those in which the azoospermism was permanent, the inflammation had lasted from fifteen to sixty days. Hence, the light cases are of far more favorable prognostic import than the intense ones. Liégeois, moreover, found that the induration persisted partially or completely in fifteen of the twenty-one cases of absolute azoospermism; but that the epididymes seemed normal to the touch in six. Of the seven in which the functions of the testes were reëstablished, five were free from induration; and in two, which were not of gonorrhœal origin, the induration persisted; so that absence of swelling and hardness is not positively indicative of a return of fertility. In such cases, the canal of the epididymes is strictured or obliterated.

As a prognostic aid, the ejaculated fluid should be examined in all cases of bilateral epididymitis. If it presents the characters of watery or colloid sperm, the absence of spermatozoa will, in all probability, be permanent.

TREATMENT.—The management of azoospermism is, as a rule, most unsatisfactory. When it depends upon chronic debilitating diseases and the excessive use of morphia, the remedies are to be addressed to the primary affection and to the breaking up of the habit. Abstinence is enjoined when it is due to sexual excesses or masturbation; and moderation should be observed when the functions of the testes are restored.

In advancing atrophy of the testes, provided it is not a symptom of lesions of the cerebro-spinal system, galvanism holds forth some prospect of success. The positive pole should be applied over the lumbar portion of the spinal column, and the negative pole should be passed over the affected organs, the precautions being taken to employ weak currents and to limit the daily sittings to two or three minutes.

Azoospermism in cryptorchids may be prevented if the subjects are seen sufficiently early in life, and if the testes are retained in the groins, by carrying out the suggestion of Curling¹ to promote their descent into the scrotum by gentle and repeated traction. In children the retained organs enjoy great mobility; and the manœuvres might succeed in adolescents and young adults, in whom the testes are, however, usually fixed. Sir Astley Cooper witnessed in "many cases" their descent from the thirteenth to the seventeenth year, and even as late as the twenty-first year; and I myself have known it to occur later, as in the following example:—

CASE XXIII. In a widower, forty-six years of age, at present under my care for impotence, the right testis remained in the inguinal canal until six months after his marriage at the age of twenty-four, when it passed into the scrotum, and is now soft, tender, and of about one-third of the volume of its fellow. In its descent it was accompanied by a portion of the intestine.

The arrest of the evolution of spermatozoa in syphilitic orchitis may be anticipated, if the disease be recognized within a few weeks, by the internal administration of

¹ Op. cit., p. 38.

iodide of potassium and bichloride of mercury; or the latter agent may be replaced by mercurial inunctions, the testes in the meanwhile being properly supported. Syphilitic epididymitis, which I have occasionally met with as a secondary symptom, readily yields to a mercurial course.

In bilateral epididymitis early and vigorous antiphlogistic treatment will usually preserve the functions of the testes. The means upon which I place the most reliance are strict recumbency, light diet, a brisk purgative, the saline and antimonial mixture with a few drops of tincture of aconite pushed to the extent of provoking slight nausea, and keeping the parts well elevated and surrounded with absorbent cotton wet with a strong solution of acetate of lead and laudanum. If, despite these measures, indurations remain after the active symptoms have subsided, they may frequently be made to disappear under the exhibition of iodide of potassium and bichloride of mercury, along with the local use of mercurial ointment, or oleate of mercury, or an ointment composed of one drachm of iodoform, two drachms of balsam of Peru, and five drachms of cosmoline. This treatment should be steadily maintained, as the most chronic cases may terminate favorably. Thus, Gosselin, Godard, and Curling record a return of spermatozoa after eight, eighteen, and twenty-four months; and Godard even narrates an instance of cure in which the indurations had lasted for ten years. In all cases particular care should be observed to guard against recurrence of the inflammation.

Finally, when the semen is too thick, as in the case of Beigel, narrated on page 103, although nothing can be done in the way of medication as far as the man is con-

cerned, impregnation may be insured by the injection of a small quantity of saccharine or alkaline tepid water into the vagina after sexual congress.

SECT. III. ASPERMATISM.

Aspermatism is the variety of sterility in which sexual intercourse is not finished with an ejaculation of semen, either because that fluid does not enter the urethra, or because its forcible expulsion is prevented by some obstacle in the urethra anterior to the prostate gland. The term is, therefore, restricted to those cases in which the lesions are seated between the seminal vesicles and the urinary meatus.

Non-emission may be congenital or acquired, and permanent or temporary; and it may depend, first, upon obstruction of the ejaculatory ducts or the urethra; secondly, upon deficient excitability of the spinal ejaculatory centre; thirdly, upon abolished sensibility of the nerves of the penis; and, fourthly, upon the inhibitory action of the brain over the centre for ejaculation. Hence, in accordance with its etiology, it may be Organic, Atonic, Anæsthetic, and Psychical.

A.—ORGANIC ASPERMATISM.

The discharge of seminal fluid into the urethra may be prevented, α , by congenital vices; β , by inflammatory lesions of the ejaculatory ducts and the prostate; and, γ ,

by symplexions; and the escape of semen from the urethra may be due, δ , to stricture of that passage, to a tight phimosis, or to induration of the corpora cavernosa.

a. Congenital occlusion, absence, and deviation of the ejaculatory ducts have been rarely met with. Schmitt¹ examined a man, thirty-five years of age, who had never had an emission either when awake or asleep, although his power to cohabit was unimpaired. He had not suffered from gonorrhœa, and his external organs were perfect; but the prostate could be felt through the rectum merely as a small, flat body, and the seminal vesicles appeared to be atrophied. Ultzmann² records the case of a vigorous man, aged twenty-four, in whom, as in the preceding instance, there was no history of gonorrhœa, and who had never been able to ejaculate during coition or under the influence of a dream, although nothing abnormal could be discovered in regard to his reproductive organs. Munroe³ describes a similar condition of affairs in a robust man, twenty-eight years of age. Under no circumstances had there ever been an emission; but a drop or two of clear mucus could be pressed out of the urethra after intercourse, and examination of the urine passed soon disclosed abundant spermatozoa.

While in the case of Schmitt it is highly probable that the atrophied prostate occluded the ejaculatory ducts, the cause of the trouble in that of Ultzmann must remain a matter of conjecture; but as the man never

¹ Würzburg Med. Zeitschrift, Bd. iii. 1862, p. 361.

² Wiener Med. Presse, 1878, p. 6.

³ Boston Med. and Surg. Journ., Feb. 21, 1867, p. 62.

emitted seminal fluid, we may assume that the ducts were obliterated, or absent. That the latter inference is not unfair is attested by a preparation¹ in the Hunterian Museum, in which the ducts are wanting and in which the remainder of the sexual organs are completely developed. In the case of Munroe there was doubtless a congenital deviation of the orifices of the ducts, so that the semen regurgitated into the bladder during intercourse.

β. *Stricture of the ejaculatory ducts and deviation of their orifices*, the results of inflammation or injury, are among the most common causes of organic aspermatism, although the evidence of their existence is based, for the most part, on the symptoms presented during life. In his researches on the condition of the genital organs of old men dead of acute and chronic diseases, Duplay² made some interesting observations which afford post-mortem proof that the ejaculatory ducts undergo certain alterations which are capable of preventing ejaculation. In one both ducts were entirely destroyed, and were surrounded by tubercular matter from the neck of the seminal vesicles to their entrance into the thickness of the prostate; in one they were converted into small, impermeable fibrous cords, and the man had had a catheter retained in his bladder for a long time for retention of urine; in one the prostate was hypertrophied, and the ducts were narrowed but pervious to semen on pressing the seminal vesicles; in one both ducts were strictured, and the orifice of the right was completely obliterated, the prostate was

¹ Klebs, Path. Anat., p. 781.

² Archives Générales, sér. 5, t. vi. pp. 437 and 438.

enlarged and indurated, and the verumontanum was hard and of the size of a big pea; and, in a fifth case, the orifices of the canals were strictured, but pressure on the seminal vesicles showed that they were open. Ample observation has moreover demonstrated not only that the extension of gonorrhœal inflammation to the prostate obstructs its ducts through inspissation of the catarrhal secretion of its glands, and frequently brings about adhesion of the orifices of the ejaculatory ducts,¹ but that the latter may be occluded by the secondary contraction or by the cicatrices which result from abscess.

Cicatricial occlusion of the ducts from deeply-seated abscess has been observed by Kocher.² A man, forty-eight years of age, had received a blow on the perineum when twenty-eight years old, which was followed by suppuration and by induration of the tails of the epididymes. Previous to the injury his wife had borne him four children; but she afterwards failed to conceive in consequence of the inability of the husband to ejaculate.

Injury of the canals in bilateral lithotomy, or even in the lateral operation during the extraction of the calculus, is liable to terminate in aspermatism. I have myself witnessed sterility from this cause in two examples, and Teevan has recently recorded four cases.³

La Peyronie⁴ describes the case of a man, the father of three children, who, in consequence of a neglected gonorrhœa, lost the power to ejaculate, although semen oozed

¹ Compare with Kraus, *Med. Times and Gaz.*, vol. i. 1871, p. 272.

² *Pitha und Billroth's Hdbch.*, Bd. iii. Abth. 2, Lief. 7, p. 433.

³ *Trans. Clin. Soc.*, London, vol. vii. p. 179.

⁴ *Mém. de l'Acad. Roy. de Chir.*, t. i. p. 316, 1819.

away shortly after coition. On post-mortem examination, a cicatrix was discovered on the summit of the verumontanum, which had so changed the direction of the orifices of the ejaculatory ducts that they looked backwards towards the bladder. Demeaux¹ found in a man twenty-three years of age, after an abscess of the perineum from a fall, that the urine passed after an aspermous coition contained normal spermatozoa; and, as the urethra was not strictured, but the perineum was diminished in size, and the prostate was drawn down lower than usual, he properly inferred that the ejaculatory ducts had been displaced.

γ. Aspermatism may arise, as Reliquet² first pointed out, from *obstruction of the ejaculatory canals by symplexions*, or concretions composed of spermatozoa, concrete mucus, epithelial cells, and refracting granules, and formed in the seminal vesicles. In the three cases narrated by Reliquet, only one duct was involved, and he ascribes the loss of power to ejaculate to the compression exerted upon the pervious duct by the distended one, and to the arrest of the contraction of the former through the pain experienced at the commencement of the expulsive act. In one example, the finger in the rectum showed a bosselation of the right lobe of the prostate, near its middle, and showed the boss to be continuous with the corresponding seminal vesicle; and in a second case, a small tumor, due to retention of the semen, was discovered at the site of the ducts. Bergh,³ of Copenhagen, met with

¹ Gaz. des Hôpitaux, No. 21, 1860.

² Ibid., 1879, pp. 891 and 915.

³ Schmidt's Jahrbücher, Bd. clxxxi. 1879, p. 36.

a similar condition in a man twenty-nine years of age; but the case differed from the cases of Reliquet in that the non-ejaculation was of an intermittent character. The patient finished his first connection in the usual manner, but afterwards there was merely a sensation of distension; although, on two occasions during sleep, after dinner, there was an abundant discharge of semen. Bergh advised coition with a condom, with a view to examine the fluid, if any should be evacuated. During the act, the man felt as if something had torn, and there was a seminal discharge, which was rich in spermatozoa and symplexions. Subsequently, there was sometimes an emission, and at other times none. In an instance recorded by De Blégny,¹ the ducts were occluded with small, hard, spherical concretions as large as peas; and the verumontanum was indurated, and of the volume of a small nut. The patient, a widower, sixty years of age, and the father of several children, contracted a second marriage, but was unable to ejaculate. In this connection, it may be stated that Beckmann² discovered a concretion as large as a cherry in the ejaculatory duct of an old man, the organic portion of which was composed of spermatozoa, and the inorganic portion principally of phosphate and carbonate of lime. The possibility of the formation of so large a concretion, and of its effecting closure of the opposite duct, should be remembered in framing a diagnosis.

δ. The fourth division of organic aspermatism includes those cases in which the semen is discharged into the ure-

¹ Civiale, *Traité Prat. sur les Maladies des Organes Génito-Uri-naires*, t. ii. p. 234.

² Virchow's *Archiv*, Bd. xv. p. 540.

thra, but its escape is prevented by some obstacle anterior to the prostate gland. If the impediment to its evacuation is seated in the posterior portion of the urethra, the greater part will usually flow back into the bladder, and minute examination of the urine passed after coition will disclose spermatozoa. When the obstacle, on the other hand, is situated at the external orifice, the semen will dribble away with the subsidence of the erection.

The most common cause of retention of the seminal fluid is *stricture of the urethra*, to which attention was first called by Petit;¹ and it is not difficult to conceive how an opening, which, in the flaccid condition of the penis, admits of the passage of urine, may, during erection, when the normal calibre of the urethra is naturally diminished, become so narrowed through spasm that the semen is confined in the canal between the coarctation in front and the turgid caput gallinaginis behind, so that its escape, either forwards or backwards, is prevented until the penis becomes flaccid. At page 103, I have narrated the case of a man in whom the stricture admitted a No. 14 bulbous explorer, and in whom the parts behind the coarctation were very sensitive; and I have also met with the following cases in which the contractions were not so small:—

CASE XXIV. A gentleman, twenty-eight years of age, had masturbated excessively from his fourteenth to his twenty-second year, and a few months subsequently, on his first sexual intercourse, discovered that, although the act was completed with the usual sensation and spasmodic ejaculatory movements, there was no escape of semen until the erection subsided, when a few drops could be pressed out of the urethra. Examination of the urine

¹ Mém. de l'Acad. Roy. de Chir., t. i., 1819, p. 323.

passed after copulation disclosed abundant spermatozoa; and a stricture, calibre 22, was discovered at one-third of an inch behind the meatus; and a second, calibre 18, was found at five inches and three-quarters from the external orifice. The prostatic urethra was extremely sensitive, and he suffered from prostatic discharges at stool.

CASE XXV. A laborer, twenty years of age, had masturbated, on an average, once every night for five years; and, on coition, six months before I saw him, he was unable to ejaculate. A stricture, calibre 19, was detected at five inches and a half from the meatus, and there was great tenderness throughout the entire curved portion of the urethra.

In these cases the fault is, in my opinion, to be ascribed less to the organic contraction than to the spasm of the muscular walls of the urethra beneath the sensitive mucous membrane, through which the opening is temporarily occluded. Hence, such cases are analogous to those of stricture in which exposure to cold and wet, or acrid conditions of the urine react on the inflamed mucous membrane, and produce retention of urine from spasmodic contraction of the muscular fibres of the urethra; and it would probably be more correct to describe them as instances of retention of semen from spasm. Since the stricture maintains the inflammation upon which the spasm depends, it is, however, needless to remove the cases from this category.

Other examples of aspermatism from stricture are recorded by Curschmann,¹ Acton,² and Blackwood.³ The

¹ Loc. cit., p. 904.

² Op. cit., 4th Amer. ed., p. 224.

³ Proceedings of the Phila. Co. Med. Soc., vol. i. p. 4.

case of Hirtz¹ terminated by a spontaneous cure during coition, which was attended by violent pain, and followed by severe hemorrhage. The man had had repeated attacks of gonorrhœa, but never ejaculated, and spermatozoa were detected in the urine. After the removal of the obstacle, the nature of which is not clear, his wife gave birth to a child.

The second impediment to the spasmodic, forcible discharge of the semen is a tight *phimosis*, of which the following is an illustration:—

CASE XXVI. A farmer, thirty-six years of age, and married for fifteen years, consulted me in April, 1880, on account of inability to procreate children. The preputial orifice, which would only admit a small probe, was seated upon the back of the head of the penis, so that the meatus was completely hidden by the integuments. He informed me not only that the urine, but that the semen when the penis became flaccid, converted the prepuce into a sac, and that their egress had to be facilitated by manipulation.

In a similar instance Blackwood² circumcised the patient and relieved his trouble. In the case of Amussat,³ after a barren marriage of five years' duration, the removal of a very tight foreskin was crowned with success; and Bergh,⁴ in the case of a man twenty-one years of age, effected a cure in three weeks by circumcision.

The third obstacle to the proper ejaculation of the urine is *induration of the corpora cavernosa*, to which

¹ Gazette de Strasbourg, No. 5, 1861.

² Loc. cit., p. 5.

³ Virchow's Hirsch's Jahresbericht, Bd. ii., 1866, p. 169.

⁴ Loc. cit., p. 37.

attention was first directed nearly a century and a quarter ago by La Peyronie.¹ As this lesion is fully considered on page 73, it need not detain us in this connection.

B.—ATONIC ASPERMATISM.

In aspermatism from atony or loss of contractility of the muscles of the seminal vesicles, ejaculatory ducts, prostate, and urethra, although there is no obstacle to the ejaculation or escape of the seminal fluid, there is never an emission during intercourse or when the patient is awake; but nocturnal pollutions under the influence of lascivious dreams are not infrequent, and are accompanied with the usual pleasurable feelings. Hence the sexual act is never completed, and the subject has to abandon his efforts merely from a sense of exhaustion. In organic aspermatism, on the other hand, except when it depends upon congenital lesions, coition is finished with a discharge which is prevented from escaping; or, if the ejaculatory ducts are closed or obstructed, the convulsive movements are experienced with the ordinary sensations.

Roubaud² attributes this form of aspermatism, which is termed idiopathic by Bergh,³ and paradoxical by Rhein-
staedter,⁴ to spasmodic contraction of the ejaculatory ducts. This opinion cannot be entertained, as the relaxation of the spasm should be followed by the escape of semen, which never happens. Schulz,⁵ Ultzmann,

¹ Mém. de l'Acad. Roy. de Chir., vol. i., 1761, p. 428.

² Op. cit., t. i. p. 248.

³ Loc. cit., p. 37.

⁴ Deutsche Med. Wöchenschrift, No. 26, 1879, p. 336.

⁵ Ibid. 1862, pp. 769 and 787.

Rosenthal, Kocher, and other observers explain it by the absence of excitability in the lumbar reflex ejaculatory centre, a view in which I entirely concur. In many examples, the general symptoms denote neurasthenia, or the depressed form of spinal irritation, which is presumed to be due to exhaustion of the lumbar division of the spinal cord; and from the fact that the affection is most frequently met with in men who have been addicted to masturbation or venereal excesses, or who have suffered from repeated attacks of gonorrhœa, a class of subjects in whom, as I have shown in the chapter on Impotence, there are, as a rule, inflammation and hyperæsthesia of the prostatic portion of the urethra, I believe that, with few exceptions, exploration with a sound or bulbous bougie will disclose lesions which maintain, and are probably the cause of, the abolished excitability of the reflex ejaculatory centre. In the majority of the cases of aspermatism, other than of the organic variety, I find that the urethra was not examined, and that hyperæsthesia was discovered in five out of seven cases in which an instrument was passed. Hence, exploration of the canal should never be omitted, since upon its condition will depend the employment of the proper measures for the relief of the trouble.

These statements are corroborated by the following cases from my private practice:—

CASE XXVII. A merchant, twenty-six years of age, had masturbated from his thirteenth to his twentieth year, and erections were provoked by merely looking at a woman, and by other slight causes. At the age of twenty he had his first connection, but

failed to ejaculate; and repeated subsequent efforts were attended with the same result. His erections were normal, and he had a nocturnal emission, with the usual sensations, about once every two weeks. The entire urethra was sensitive, and the prostatic portion excessively so; and there was a stricture, calibre 24, at six inches from the meatus.

CASE XXVIII. A teacher, twenty-two years old, had gonorrhœa five years ago, which degenerated into a gleet; and for the past three years he has had a colorless discharge, particularly after erections and straining at stool. During the past eighteen months he has been unable to have an ejaculation during coition, although he prolonged the act until fatigue required him to desist. Now and then he had a nocturnal emission, which was attended with diminished sensation, and erections were provoked by trivial causes. He was continually morbid about his condition, so that he could with difficulty attend to his daily duties, being unable to fix his thoughts for any length of time upon any subject except his sexual trouble. He had pain in the back, loss of appetite, and palpitation of the heart, and was easily fatigued. A No. 25 bulbous explorer disclosed a very sensitive prostatic urethra, a linear stricture at six inches from the meatus, and a considerable prostatic discharge.

C.—ANÆSTHETIC ASPERMATISM.

The first link in the chain of the phenomena concerned in the act of ejaculation is the conduction of the sensory impressions excited by the friction of the penis against the walls of the vagina to the lumbar division of the spinal cord. If the sensory nerves fail to respond to the ordinary stimulus, reflex contraction of the ejaculatory muscles is prevented, and emission is rendered impossible. This variety of aspermatism, which may be termed anæs-

thetic, is not common, but the subjoined illustrations demonstrate the possibility of its occurrence.

As the result of concussion of the spine, a soldier was affected with insensibility of the prepuce, of the gland and skin of the penis, and of the scrotum to such a degree that pinching and pricking with pins were not perceived by him. Abundant nocturnal pollutions occurred at long intervals; but he was unable to ejaculate on coition or masturbation, the latter of which he resorted to with the vain hope of relieving priapism, from which he often suffered, and which constituted an obstacle to the discharge of the urine.¹ A gentleman, aged twenty-eight years, with congenital absence of the prepuce, was unable to complete sexual congress with an emission, although he had an occasional nocturnal pollution. Concluding that the trouble arose from a want of excitability in the nerves of the gland of the penis, Curling² applied the acetum cantharidis, which left the part in a very sensitive condition; and the man subsequently married, and seldom failed to finish intercourse in the normal manner.

In a second case, under the charge of the same observer,³ a gentleman, forty-four years of age, was unable to ejaculate on account of insensibility of the gland and skin of the penis. Nearly the entire back of the organ was covered by a large, indurated scar, and the prepuce had disappeared, the lesions having been due to syphilis.

In a third case, under the charge of Curling,⁴ the distension of the glans and the irritability of its sensitive nerves were prevented by occlusion of the meshes of the

¹ Lallemand, *op. cit.*, 3d Amer. ed., p. 211.

² *Op. cit.*, 4th ed., p. 483.

³ *Ibid.*, p. 485.

⁴ *Ibid.*, p. 460.

corpus spongiosum by inflammatory deposits, through which the glans did not enter into perfect erection.

Non-emission may also be due to obtunded sensibility of the prostatic portion of the urethra, which Van Buren and Keyes¹ regard as being the seat of pleasure in the act of copulation. They record a case in which this condition was found in a man, thirty-six years of age, who had never experienced an ejaculation during his nine years of married life, although he had had nocturnal emissions.

D.—PSYCHICAL ASPERMATISM.

That the reflex movements emanating from the lumbar genital centre are amenable to the will is illustrated by the fact that many men, to avoid impregnation, are able to retard an emission until the penis is withdrawn from the vagina; and the restraining action of the cerebrum is also proved by two curious cases of atonic aspermatism, recorded by Roubaud² and Hicquet,³ in which the ejaculation instantly ceased if the patient awakened during a nocturnal pollution. Other men, through disgust, suspicion of infidelity, or loss of passion, are unable to complete sexual congress with their wives, although they succeed perfectly with other women. Hence aspermatism from the inhibitory action of the brain over the centre for ejaculation is temporary or relative, emission being possible under some circumstances and impossible under others; and it is altogether independent of organic lesions.

¹ Genito-Urinary Diseases with Syphilis, p. 466.

² Op. cit., p. 244.

³ Bull. de l'Acad. Roy. de Méd. de Belgique, sér. 2, t. iv. p. 482.

DIAGNOSIS.—The determination of the particular form of aspermatism is based upon the history of the case, upon the thorough exploration of the external and internal organs of generation, upon the examination of the urine, and upon the conclusions drawn from the effects of the remedies employed for its relief. As these points have already been more or less fully considered, little need be added in regard to them.

The existence of congenital absence or obliteration of the ejaculatory ducts is rendered almost certain if there has never been an emission under any circumstances whatsoever, if the urine is devoid of spermatozoa, and if there is no history of antecedent inflammation or injury. When, on the other hand, the urine passed after coition contains spermatozoa, and the other negative signs are present, congenital deviation of the ducts with discharge of the semen into the bladder is a perfectly fair inference.

A history of deeply-seated abscess of the perineum or lithotomy points to cicatricial occlusion of the ducts; while the detection of spermatozoa in the urine after sexual congress in persons who have suffered from perineal abscess or from neglected gonorrhœa shows that there is acquired deviation of those canals. Obstruction of the ejaculatory ducts by sympexions gives rise to the affection termed spermatic colic by Reliquet. There is always reflex contraction or loss of dilatibility of the bladder. This makes itself known by difficult and very frequent urination, and by the expulsion of the last drops, which are liable to be bloody, being attended with lancinating pains which extend from the anus to the extremity of the penis. The subjects refrain from intercourse because excessive suffering is excited at the mo-

ment when ejaculation should occur; or is even induced by venereal desires or by commencing erection. Exploration through the rectum discloses a small, circumscribed tumor in the region of the prostate; and if the latter be compressed between the finger and a sound in the urethra, either the swelling will at once disappear, and the instrument be covered with semi-soft, grayish masses looking like bits of vermicelli or grains of boiled rice, or there will be an abundant discharge of semen, which contains symplexions, at the ejaculation during the first coition after the manipulations; or spermatozoa and seminal concretions will be passed at the succeeding act of micturition.

In aspermatism from stricture of the urethra the patient has nocturnal emissions, the usual convulsive movements of ejaculation and pleasurable sensations are felt during coition, and the urine passed after sexual congress contains spermatozoa. The diagnosis is confirmed by the use of the exploratory bougie, to which sufficient reference is made on page 38. When the trouble arises from a tight prepuce, its cause is obvious.

Atonic aspermatism is always to be suspected in persons who have indulged excessively in venery or in masturbation, or who have had gonorrhœa; in those who suffer from the ordinary symptoms of neurasthenia; and in subjects who ejaculate under the influence of a lascivious dream. The diagnosis is confirmed by the existence of hyperæsthesia of the prostatic urethra.

The anæsthetic form of the affection is denoted by the loss of sensibility of the gland and skin of the prepuce and penis; and non-ejaculation from emotional causes is readily determined by the history of the case.

PROGNOSIS.—Aspermatism from congenital or acquired absence, obliteration, or deviation of the ejaculatory ducts is permanent, and nothing is to be expected from treatment. When the ducts are obstructed by sympexions, or when the affection is referable to stricture of the urethra or phimosis, a cure may be looked for. The prognosis is good when the failure to ejaculate depends upon hyperæsthesia of the prostatic portion of the urethra; but atonic aspermatism without morbid sensibility of that division of the urethra calls for a certain amount of reserve in the expression of an opinion; and the same statement holds good for the anæsthetic variety. The psychical form is temporary or relative, and capable of correction.

TREATMENT.—When the ejaculatory ducts are obstructed, the plan proposed and successfully practised by Reliquet in two cases is to be recommended. A sound having been introduced into the bladder, the circumscribed swelling is emptied by counter-pressure with the finger in the rectum. When the trouble depends upon stricture of the urethra, dilatation or internal division should be resorted to; and if it arises from phimosis, circumcision will afford prompt relief.

When the atonic variety of aspermatism is combined with inflammation and hyperæsthesia of the prostatic urethra, the measures should be directed to subduing the latter before attempts are made to restore the contractility of the muscles concerned in the act of ejaculation. Hence, the treatment is essentially the same as that described in pages 42-54.

If, on the other hand, the prostatic portion of the urethra is insensitive, a tonic course should be at once

instituted. The best prospects for relief are held out by quinine, iron, and strychnia, internally, cold sitz-baths,¹ and galvanism,² the negative catheter pole being in contact with the verumontanum, while the anode is placed over the lumbar portion of the spine or the perineum. Instead of continuous, induced currents³ may be employed, as in the instance of Hicquet,⁴ in which a cure was effected in eight days after the failure of the remedies advised by Roubaud.⁵ In the case recorded by the latter author, under the idea that the affection was due to spasm of the ejaculatory ducts, normal coition was restored, after a preliminary venesection, by a pill composed of assafœtida, castoreum, extract of opium, and extract of hemlock, and by sprinkling the vesicated surface of the perineum with morphia. In another example of atonic aspermatism Hicquet⁶ succeeded in curing his patient in ten days by the internal exhibition of the alcoholic extract of nux vomica, gradually increased from two to six centigrammes a day.

In anæsthetic aspermatism, the passage of the faradic brush over the penis, the anode being applied to the spine, is indicated, with the view to restore the obtunded or abolished sensibility of the nerves. In the event of the failure of this measure, the gland of the penis may be blistered with some prospect of success, as in an example from the practice of Curling.⁷

Aspermatism from disturbances of the brain, such as

¹ Consult page 55.

² Consult page 56.

³ Consult page 57.

⁴ Loc. cit., p. 482.

⁵ Op. cit., p. 244.

⁶ Loc. cit., p. 492.

⁷ Op. cit., p. 483.

loss of affection for or repugnance to a certain woman, is hopeless, unless the subject undergoes a change of sentiment. Being entirely emotional, nothing can be done for him in the way of medication.

SECT. IV. MISEMISSION.

In the preceding forms of sterility, no semen whatsoever, or unproductive semen, is secreted; or there is failure to ejaculate. In the variety under consideration, fertile semen is emitted, but it is not deposited in the upper portion of the vagina; so that it differs from aspermatism from mechanical obstruction in that the secretion has an outlet, and does not regurgitate into the bladder, or slowly ooze from the urethra when the erection has subsided. Hence, the term misemission is employed in the sense that the ejaculation has a faulty direction.

The most common causes of misemission are *vices of conformation of the urethra*. Thus, hypospadias may destroy the capacity for procreation, even when it is of light grade, as in two cases recorded by Kirsch;¹ but the deformity does not usually involve sterility, unless the opening of the urethra is situated at the peno-scrotal junction or in the perineum, and not even then, as, in exceptional instances,² the posterior wall of the vagina may act by replacing the deficient inferior wall of the urethra, thereby permitting the ejaculated semen to reach its des-

¹ Wiener Med. Presse, 1881, p. 214.

² Morgagni, Anat. Path. 1838, t. iii. p. 73, and Casper, op. cit., p. 251.

tion. The same statements are applicable to epispadias, and to fistulous openings in the urethra, the result of stricture or injury. In all of these conditions the prognosis is unfavorable, and the treatment is most unsatisfactory. If a plastic operation be practised, the precaution should be taken to make a perineal outlet for the urine.

Malposition of the meatus, through which the semen is voided backwards and downwards, or to one side, is an occasional cause of misemission, and is usually due to congenital or acquired shortening of the frenum. Guerlain¹ has reported the case of a man, thirty-five years of age, in which the penis was almost completely rotated from left to right, so that the dorsal surface rested on the scrotum, and the meatus was situated on the side of, and about five-tenths of an inch behind, the extremity of the gland; and Guillon² met with a case in which the meatus opened on the side of the gland, and in which the stream of urine described almost a right angle with the penis. When the trouble arises from shortening of the frenum, the proper remedy is division of that structure. In the case of Guillon, excision of the pouch-like walls of the meatus resulted in a cure.

¹ Bull. de la Soc. Anat., sér. 2, t. iv. p. 87.

² Gaz. Méd. de Paris, 1843, p. 160.

CHAPTER III.

SPERMATORRHŒA.

IN its restricted sense spermatorrhœa means a constant escape of seminal fluid without erection or pleasurable sensation; but the term, in a sense which has prolonged sanction, is employed in the following description of the affection to designate all the varieties of involuntary seminal losses which occur beyond the limits of health, and it is, therefore, synonymous with seminal incontinence. Under no circumstances should the affection be regarded as a "functional disorder of the testes," since in the great majority of instances it is primarily dependent upon and symptomatic of weakness or exhaustion along with increased impressibility, mobility, or excitability of the genito-spinal centre, phenomena usually induced by hyperæsthesia of the nerves which supply the prostatic portion of the urethra.

CLASSIFICATION.—Seminal incontinence includes three conditions which may exist separately, or pass into one another, or be combined in the advanced stage of the disorder. These conditions constitute the following varieties of the disease:—

First. Nocturnal emissions or pollutions, which occur during sleep, and are generally attended with an erection, pleasurable sensation, and an erotic dream.

Second. Diurnal pollutions, which take place when the subject is awake, are excited by slight mechanical or psychical causes, and are usually accompanied with incomplete erection and diminished sensation.

Third. *Spermatorrhœa* in the strict acceptation of the term, or a slight continual flow of semen from the urethra, without erection or specific sensation, without impure thoughts, or during urination or defecation. To avoid confusion I will employ the term *spermorrhagia* to indicate this phase of the affection.

1. NOCTURNAL POLLUTIONS.—Involuntary nocturnal seminal discharges constitute the variety of the affection in regard to which physicians are usually consulted, and about which not a little ignorance prevails, as they are natural to all men, and are most common after the epoch of puberty, when the mind is more or less taken up with sexual matters. Their frequency varies in accordance with a great many circumstances, such as age, climate, habits, constitution, temperament, diet, and predisposition, it having been observed that they are very liable to occur in young men who were affected in their childhood with nocturnal incontinence of urine. Their frequency also varies greatly in the same individual; but it is impossible to determine the healthy standard merely by the intervals of their repetition, since what may be normal in one person may be morbid in another. In a general way I should say that in single men who lead a continent life and possess a sound nervous system, emissions at intervals of two weeks are indicative of excellent health. In such persons they are merely reflex signs of fulness or distention of the seminal passages, and constitute an in-

convenience of ungratified sexual instinct. Even if they occur once or twice in a week, provided they are not followed by symptoms of nervous disorder, they are not at all inconsistent with temporary good health; but, as I have just intimated, it is a question of individual tolerance and constitution, or vulnerability of the nervous system. Hence persons who consult the physician in regard to involuntary nocturnal losses should be informed that they are natural; and they should be impressed with the fact that the emissions need not awaken concern unless they are accompanied with unpleasant effects.

Nocturnal pollutions are abnormal or pathological when they are followed by headache, backache, slight enfeeblement of the functional powers of the brain, mental depression, and bodily or mental languor or lassitude; when they occur in married or single men who indulge in regular intercourse; when they take place without erections or dreams, and the patient is only made aware of them by the stains on his linen; when they attend or follow acute or chronic diseases; and when they are complicated by diurnal pollutions or spermorrhagia.

All of the preceding conditions are very liable to be attended with one of the varieties of impotence, which, indeed, may be the only indication that the emissions are pathological or one of the effects of impairment of the functions of the lumbar cord. In men of apparently the same amount of vigor and resistance, and in whom the pollutions occur with equal frequency, the associated symptoms of nervous exhaustion vary very much in degree, or they may be entirely absent. Thus, in Case VI., page 30, in which the emissions occurred from one to five times a week, the signs of neurasthenia were pronounced;

while in Case XVI., page 40, which was characterized by an excessive number of pollutions, there was not the slightest evidence of spinal weakness. In Case XI., page 33, there were no general symptoms whatsoever; while in Case XIV., page 35, the patient was a hypochondriac. In both the emissions took place at the same intervals. In the first of the following examples, which illustrate the same point, the man was in robust health; while in the second, although the patient evinced no outward evidence of impaired health, the signs of myelasthenia were marked. They are selected because they present many points in common.

CASE XXIX. A student of law, aged twenty-one, had masturbated from his eleventh to his eighteenth year, and has suffered from nocturnal emissions for the past three years, on an average, three times a week. For the past five months he has had irritability of the bladder and feeble erections with premature ejaculations, for which he sought my advice. The lips of the meatus were red and pouting, and I detected a stricture, calibre 13, at five inches and a half from the meatus, along with great sensitiveness from that point as far as the neck of the bladder.

CASE XXX. A bookkeeper, twenty-one years of age, has had nocturnal pollutions, which were not always accompanied by voluptuous dreams, three times a week, on an average, for four years; and he had masturbated from his tenth to his seventeenth year. On the following morning he felt greatly prostrated; and he constantly suffered from pains in the back, ano-rectal region, and top of the head, vertigo, muscular weakness of the limbs, and mental lassitude and depression. The prostatic urethra was excessively sensitive, but there was no stricture, and he passed prostatic fluid when the bowels were constipated.

2. DIURNAL POLLUTIONS.—Ejaculation of semen when the patient is awake is always morbid, and indicates a condition of irritable weakness of the genital organs and of the reflex centres which preside over them. In the lesser phase of this variety an emission is due to slight peripheral irritation, provoked by friction of the clothing, horse-back exercise, driving over rough streets, or even shaving, or combing the hair,¹ or shampooing the head;² while in the more aggravated form the ejaculation is induced by psychical irritation, as reading libidinous books, the sight of indecent pictures, lascivious ideas, or simply looking at a female. In the former of these conditions there is a tolerable erection, but the sensation is diminished; in the latter the erection is flabby, or the penis is flaccid, and there is little or no pleasure.

3. SPERMORRHAGIA.—When the trouble is more advanced, semen is constantly discharged without the occurrence of the orgasm; and its passive loss, which appears to be associated with dilatation of the orifices of the ejaculatory ducts from paralysis of their muscular fibres, may be the only sign of seminal incontinence. The existence of this condition is denied by some writers, but its occurrence cannot be questioned; and Case XXI, page 98, in which the gelatinous fluid brought away by the bulbous explorer contained motionless spermatozoa, and in which the discharge was increased by straining at stool, and by toying with women without gratifying the passions, affords a capital illustration of it.

¹ Townsend, *Elements of the Therapeutics*, vol. ii. p. 399. London, 1799.

² Flint, *Principles and Practice of Medicine*, 5th ed., p. 938.

Under this category should be included the condition in which the semen is unconsciously discharged in the acts of urination and defecation; and it likewise depends upon irritable weakness of the seminal vesicles and ejaculatory ducts. While in the majority of instances the fluid pressed out of the urethra in these ways is derived from the prostate, the microscope discloses that it is spermatic in a certain proportion of cases. Some authors are skeptical in regard to the passage of semen with the urine; but its occurrence is attested, apart from older observations, by five cases recently recorded by Beard,¹ by Case X., at page 33, and by the following additional instance from my private notes:—

CASE XXXI. A clerk, twenty-eight years of age, had masturbated freely for ten years, and for the past two years has had difficulty in acquiring an erection, although he still has sexual desire. He is greatly depressed, easily fatigued, incapable of prolonged mental exertion, and has a woe-begone expression. There is a constant slight discharge of a clear, viscous fluid which causes the lips of the meatus to adhere during the night, and he is convinced that the urine contained semen. I found, on examination, that the urine was highly acid, and contained a few motionless spermatozoa, pus corpuscles, and crystals of oxalate of lime. Strictures, calibre 22, were detected at one-eighth of an inch and five inches from the meatus, and the prostatic urethra was highly sensitive.

CLINICAL HISTORY.—Any one of the three forms of spermatorrhœa may exist separately, but they gradually pass into each other, and are variously intermixed in the

¹ Medical Record, 1879, pp. 73, 74, and 558; and 1880, pp. 507 and 508.

advanced grade of the affection. When the case goes on from bad to worse, it usually pursues the following course, in consequence of the increase in the mobility of the ejaculatory centre, and of the advancing exhaustion of the entire nervous system. At first abnormal frequency of the nocturnal pollutions is associated with backache, headache, a sense of painful muscular fatigue, and slight paresis of the brain, as indicated by incapacity for any sustained mental effort. With the increase in the number of the emissions, the patient discovers that erections are becoming insufficient, and that ejaculation on coition is precipitate; and the general symptoms are aggravated by the addition of dulness of perception, impairment of memory, vertigo, mental dejection, weakness of vision, trembling of the limbs, palpitation of the heart, shortness of breath, a sense of oppression in the chest, flatulence, constipation, and other dyspeptic signs. Diurnal pollutions from slight mechanical or psychical causes are now superadded, and the emissions occur, with little or no erection or pleasurable sensation, or even when the penis is flaccid; and intercourse is impracticable, either from flabby erection or from anticipating ejaculation. The general symptoms also are more serious. The patient is liable to brood over his assumed lost virility, and the mental depression verges upon or passes into a condition of sexual hypochondrism. His gait is unsteady; he is subject to wandering neuralgic and rheumatoid pains; the hands and feet are habitually cold; he passes restless or sleepless nights; shuns society; fears to look one in the face; is utterly incapacitated for mental or physical exertion; and thinks of nothing but his sexual organs. With the still further increase of the irritable weakness

of the genitalia and nervous system, the semen constantly oozes out of the urethra, and its discharge is augmented during defecation and micturition. The man is converted into a confirmed hypochondriac, and if he comes from an insane family, he lapses into insanity, not, however, because of the seminal losses, but because of the disturbances of the nervous system which lead to the emissions. A person who has inherited a tendency to insanity, epilepsy, ataxia, or other nervous disorders, may, therefore, bring on those affections, the first link in the chain being functional troubles of the nervous centres, which gradually pass into organic disease, and are caused, according to my observations, in rather more than nine-tenths of all cases, by masturbation.

Of the general symptoms which are associated with abnormal seminal losses, and which indicate more or less complete exhaustion of the brain and spinal cord, an analysis of seventy-six cases, of which I have notes, indicates the following interesting facts in regard to their importance and relative frequency. There was an anxious or depressed condition of the mind in thirty-one; constant dwelling upon sexual matters in thirty-five; hypochondrism in six; mental dejection after intercourse in twenty-five; impairment of memory in twenty-three; incapacity for prolonged mental exertion in twenty-two; headache in nineteen; vertigo in fourteen; broken sleep in five; insomnia in two; drowsiness in five; irascibility in two; asthenopia, or *muscæ volitantes*, in fourteen; noises in the ears in eleven; muscular weakness of the limbs and fatigue in thirty-eight; trembling of the limbs in six; temporary reflex paraplegia in one; pain in the back in thirty-two; oppressed breathing in seven; pain in the

chest in three; constipation in twenty-five; dyspepsia in seventeen; palpitation of the heart in ten; subjective sensations of cold in seven, and of heat in four; loss of flesh in nine; and pallor of the face in twelve.

It will thus be perceived that constant occupation of the mind with the sexual functions, mental dejection, impairment of the memory, incapacity for mental work, headache, vertigo, muscular weakness of the limbs, pain in the back, noises in the ears, and irritability of the eyes constitute the most common of the disturbances of the cerebro-spinal axis and of the special senses; while, of the phenomena referable to the circulatory, respiratory, digestive, vaso-motor, and nutritive systems, palpitation of the heart, oppression of breathing, constipation, indigestion, chilliness, a feeling of elevated temperature, pallor, and emaciation, are the most frequent. In six cases the presence of dark spaces under the eyes formed the subject of grave apprehension.

A further analysis of the seventy-six cases shows that certain local signs are connected with seminal incontinence. There was feebleness of erection with premature ejaculation in eighteen; irritable weakness in sixteen; total failure of erection in five; elongation of the prepuce in twenty-one; relaxation of the scrotum in thirteen; irritable testis in four; varicocele in one; coldness of the genitalia in six; a feeling of heat in the genitalia in two; painful ejaculation on intercourse in two; bloody ejaculation in one; and irritability of the bladder in four. In thirteen examinations of the semen furnished by patients suffering from an aggravated form of the malady, I found that fluid to be watery, and that in three the spermatozoa were small, motionless, and variously de-

formed, and, therefore, incapable of impregnating the ovum. As the changes which the semen undergoes in spinal exhaustion have been so fully considered in the section on azoospermism, they need only be referred to in this connection.

ETIOLOGY.—Spermatorrhœa is not a distinct affection, but one of many symptoms of general and local lesions, or of both combined. In the vast majority of instances it must be regarded as a neurosis, or a functional derangement of the nervous system, which is indicated by increased susceptibility of the brain and cord, or feebleness of their powers of resistance to acts which in healthy persons would not be productive of evil consequences. Like other neuroses, it may be the result of congenital predisposition, when it is liable to be observed in several members of the same family through several generations. Under these circumstances the subject is of a nervous, excitable, or irritable temperament; and he probably suffered during his infancy from nocturnal incontinence of urine, as was first pointed out by Trousseau,¹ of which the following example is a marked illustration:—

CASE XXXII. A physician, fifty years of age, consulted me, March 14, 1881, on account of nervous exhaustion, seminal losses, and dread of impotence. Up to his tenth year he was troubled with nocturnal enuresis. He was a close student at college; and at the age of eighteen began to have nocturnal emissions, and his mind dwelt constantly on sexual ideas; but he never masturbated. Up to the time he saw me, or for thirty-two years, the emissions varied from one to three a week; but he did not evince any special signs of neurasthenia for several years after their commencement,

¹ Op. cit., t. ii. p. 636.

when he observed that he was constantly drowsy, and that he was very restless, particularly in crowded assemblies and at social entertainments. He soon became easily fatigued, and was incapable of bodily exertion, and his brain was unequal to prolonged work. Three years ago he abandoned the practice of his profession, and during a visit to Europe, in the summer of 1880, he had a mild attack of reflex paraplegia, which followed a sudden rush of blood to the head. He never had sexual intercourse. He has an erection nearly every morning, but the gland of the penis is rather flabby, and he notices that the lips of the meatus are glued together by a slight gleety discharge. The prepuce is somewhat long; there is a stricture, calibre 22, one-third of an inch behind the meatus; the prostatic urethra is highly sensitive; there is a large varicocele of the left side; and there is a tendency to irritability of the bladder.

Among the predisposing causes may be mentioned erotic ideas. When constantly and involuntarily indulged in, even when the patient does not practise natural or unnatural acts, as in the preceding case, they constitute a powerful factor in the production of irritation of the genital organs and of reflex impressibility of the centres which preside over them.

Seminal incontinence is usually acquired, and is due in the great majority of instances to masturbation. Thus of the seventy-six cases of which I have a record, in only one was it the result of an inherited predisposition. Of the remaining seventy-five, in seventy, or ninety-three per cent., it was traceable to onanism; in three it arose from gonorrhœa; and in two it was met with in men, who had masturbated, suffered from gonorrhœa, and had indulged their propensities in various ways. Sixty-four were single, ten were married, and one was a widower.

Seven cases occurred before the age of twenty; forty-seven between twenty and thirty; sixteen between thirty and forty; and five between forty and fifty. All of the married men were given to sexual excesses; and although three stated that they were not addicted to masturbation early in life, I believe that marital sexual excess is generally the natural result of a previously vicious habit. Of the seventy masturbators, all except fourteen had one or more strictures; and the remaining five patients were affected in the same way. In only five cases was decided hyperæsthesia of the urethra absent; so that this condition is rather less frequent in cases of spermatorrhœa than in cases of impotence, in which, as has been pointed out on page 21, it was wanting in twelve cases out of one hundred and forty-nine.

Under the influence of erotic ideas, masturbation, sexual excesses, or unsatisfied sexual excitement produced by toying with females, exaggerated irritability of the genital organs is induced, and is soon followed by chronic or subacute inflammation and hyperæsthesia of the prostatic portion of the urethra, which culminate, in bad cases, or in those characterized by diurnal pollutions and spermorrhagia, in dilatation and relaxation of the orifices of the ejaculatory ducts. As the natural result of their constant excitability, the nerves distributed to the prostatic urethra are alive to the slightest impressions. This condition induces increased mobility or irritability of the reflex cerebral and spinal genital centres, through which the motor nerves which supply the ejaculatory apparatus are thrown into action, and an emission follows. This, it seems to me, is the rational explanation of seminal incontinence.

Involuntary seminal losses are also met with during convalescence from or during the progress of certain acute and chronic diseases which are characterized by disturbances, or exhaustion, of the nervous system. Thus, it may be symptomatic of variola or phthisis,¹ typhus,² progressive muscular atrophy and commencing bulbar paralysis,³ of paraplegia,⁴ and of locomotor ataxia,⁵ in the last of which affections Hammond⁶ has recorded an example of eight nocturnal pollutions in a night. Chronic alcoholism also predisposes to their occurrence; and Mitchell⁷ describes a case in which they seemed to be due to the habitual use of opium.

Of the local causes of spermatorrhœa by far the most common are hyperæsthesia and chronic inflammation of the prostatic portion of the urethra which are generally induced by masturbation; and these morbid conditions are just as important in its production as they are in the causation of impotence. In the vast majority of cases, they constitute the original source of the trouble, and tend not only to excite reflex emissions, but also to maintain the disorder by keeping the mind occupied with sexual matters. Even in cases in which the affection would seem to depend upon other local lesions, they are almost invariably present, so that associated disorders of the penis,

¹ Curschmann, *loc. cit.*, p. 867.

² Nowatschek, *Wiener Med. Presse*, 1879, p. 1067.

³ Stéphanides, *ibid.*, p. 913.

⁴ Roberts, *Canada Med. Record*, vol. vii. p. 253.

⁵ Erb, *op. cit.*, pp. 543 and 585; Trousseau, *op. cit.*, p. 510; and Topinard, *De l'Ataxie Locomotrice*, p. 171.

⁶ *Treatise on the Diseases of the Nervous System*, 6th ed., p. 593.

⁷ *Amer. Med. Monthly*, vol. xv. p. 285.

the urethra, or the rectum merely act by intensifying them. In a few cases it is true that the hyperæsthesia is not marked, and that other abnormal states, as a congenital contraction of the meatus, are sufficient to excite reflex contraction of the seminal vesicles; but in these instances it is scarcely possible that local conditions would induce the trouble in persons who were not predisposed to it. Hence, I think that no case should be treated without a preliminary examination of the urethra, which seems to be omitted by physicians in general, and by many surgeons.

Of the local exciting causes phimosis, in the form of redundancy of the prepuce, is probably one of the most common, and it acts as a source of reflex irritation by keeping the gland moist, or by retaining the smegma. Not only is the prepuce elongated, but in many cases it will be found to constrict the gland when the penis is erect, a point which should always be looked into, as it has an important bearing upon the treatment. Herpes of the prepuce, which is far less frequently met with than the preceding condition, is another cause; so also is congenital shortness of the frenum, as in a case recorded by Heulard Darcy.¹

Of the conditions which relate to the urethra, the most important are congenital narrowing of the meatus,² and organic stricture seated near the orifice, of which I have met with several examples. Zeissl³ has quite recently declared that spasmodic stricture is a cause of very frequent pollutions. In a unique case recorded by Genau-det,⁴ the removal of a polyp from the prostatic portion of

¹ Virchow-Hirsch's *Jahresbericht*, Bd. ii., 1866, p. 169.

² Hieguet, *Canstatt's Jahresbericht*, Bd. iii., 1860, p. 225.

³ *Med. News and Library*, January, 1881, p. 41.

⁴ Virchow-Hirsch's *Jahresbericht*, ut supra, p. 163.

the urethra was followed by the cessation of the nocturnal emissions.

Acute inflammation of the seminal vesicles is attended with frequent and painful, and it may be with bloody, pollutions. In an instance of chronic inflammation of these bodies under my care, the discharge was usually of a yellowish tint from the admixture of pus, and decidedly bloody when the pollutions followed each other in quick succession. In cases of this description the seminal losses are due to hyperæsthesia of the mucous membrane of the vesicles, so that the trouble is analogous to incontinence of urine from morbid sensibility of the lining membrane of the bladder. Liégeois¹ states that epididymitis is a fruitful source of nocturnal emissions.

Among other exciting causes of spermatorrhœa may be mentioned diseases of the rectum and anus, as piles, ascariides, fissures, pruritus, and painful eruptions; and Perrin² has recorded a case in which nocturnal pollutions were induced by the cauterization of internal hemorrhoids. As the rectum and anus are supplied by the same nerves as are distributed to the genitalia, it is not surprising that the reflex ejaculatory centre should respond to an impulse transmitted from them. The same statement is true of certain affections of the bladder. Habitual constipation may also excite emissions through the pressure exerted upon the seminal vesicles during the evacuation of hardened feces; but this is observed only when the orifices of the ejaculatory ducts are dilated and paralyzed. The fluid which escapes from the urethra of healthy men,

¹ Loc. cit., p. 512.

² Canstatt's Jahresbericht, 1857, p. 301.

under these circumstances, is not seminal, but it is usually derived from the prostate.

ANATOMICAL CHARACTERS.—The morbid appearances which belong to spermatorrhœa in its early stage are utterly unknown as far as their verification by post-mortem inspection is concerned. That the exaltation of the sensibility of the urethra depends upon subacute or chronic inflammation of its mucous membrane, particularly in the region of the verumontanum, is rendered certain by the concomitant local symptoms, by exploration with the endoscope and the sound, aided by the finger in the rectum, and by the results of treatment. In seven aggravated cases, of which two are recorded by Lallemand,¹ one is narrated by Curling,² and four are collated by Kaula,³ there was a stricture in four, injection of the mucous membrane of the deep portion of the urethra in two, dilatation of the orifices of the ejaculatory ducts in six, combined with excoriation in two, ulceration in two, and enlargement of the canals themselves in one, suppuration of the prostate in four, suppuration of the seminal vesicles in three, and chronic inflammation of those bodies in two.

As far as I am aware there have been no examinations of the nervous centres connected with the genital organs in spermatorrhœa, so that it is impossible to say whether they are the seat of structural lesions. In a case of paraplegia induced by sexual excesses, however, Sir Wil-

¹ Op. cit., Phila., 1858, pp. 37 and 42.

² Op. cit., 4th ed., p. 492.

³ De la Spermatorrhée, Thèse de Paris, 1846, pp. 167-173.

liam Gull¹ was unable to detect the slightest change in the cord. The common view, that the cells which minister to the functions of the cord are completely exhausted, is, therefore, probably correct.

DIAGNOSIS.—The only mode of determining whether the fluid which constantly moistens the urethra, is discharged at stool or with the urine, or is brought away by the bulb of the explorer, is seminal in its character, is to examine it under the microscope with a power of about four hundred diameters, with the view of discovering spermatozoa. Should they be found, there need be no doubt as to its true nature; but it must be remembered that their absence is not an evidence that the case is not one of spermatorrhœa, since, as I showed at page 97, the exhausted sexual apparatus in aggravated examples furnishes a watery fluid which may be devoid of fertilizing elements. Under these circumstances the history of the case, and the associated general symptoms are to be considered in framing the diagnosis; and this is particularly true of the examples in which a discharge is expressed at stool, and which in the majority of instances is merely the catarrhal secretion of the prostate gland. Under the microscope the albuminous, viscid prostatic fluid will be found to contain cylinder epithelium, mucous corpuscles, a few leucocytes, and minute concentric amyloid concretions; and spermatie crystals will soon make their appearance on the slide; while the thin, transparent, azoospermous semen contains cylinder epithelium, and probably epithelium which has under-

¹ Guy's Hosp. Reports, 1858, p. 175.

gone fatty or colloid degeneration, a few lymph corpuscles, an abundance of fatty detritus, and possibly a few small shining bodies which are the remains of badly evolved spermatozoa.

In the absence of minute examination the rule may be framed that the discharge which occurs during defecation in persons who are laboring merely under too frequent nocturnal pollutions is an evidence of coexisting catarrhal inflammation of the prostate; while the flocculent sediment contained in the urine, and the discharge at stool in persons who are suffering from nocturnal and diurnal pollutions, and a slight continued discharge from the urethra represent semen. In the last case the assumption that the orifices of the ejaculatory ducts are relaxed will generally be correct, and it will be strengthened if the patient is impotent.

PROGNOSIS.—According to my experience the prognosis of seminal incontinence is far from being so unfavorable as many writers would lead one to believe. In regard to increased frequency of nocturnal emissions, the phase of the affection about which the physician is most frequently consulted, I have no hesitation in declaring that it yields readily to treatment, particularly when it is caused or kept up by appreciable local lesions, such as hyperæsthesia of the prostatic urethra, stricture, or hemorrhoids. The subject of Case XVI., page 40, is an excellent and not uncommon illustration of the truth of this statement. The pollutions had been excessive for two years, and were complicated by prostaticorrhœa and a mild grade of impotence. On the 8th of April I divided a stricture which was seated just behind the meatus, and

ordered thirty grains of bromide of potassium to be taken at intervals of eight hours, along with the one-sixtieth of a grain of atropia at bedtime, and a laxative pill as it might be required. On the 6th of May, a No. 30 conical steel bougie having been passed at stated intervals to overcome the morbid sensitiveness of the prostatic urethra, the patient reported that he had emissions on the nights of April 17 and 18; and four weeks later he informed me that he had a pollution on the 22d of May. Equally rapid and gratifying results were obtained in the following example:—

CASE XXXIII. A teacher, twenty-four years of age, had masturbated up to five years ago. He then began to be troubled with nocturnal emissions, which frequently occurred for five consecutive nights, when there would be an interval of freedom for ten days. For the past two years the erections have been flabby, and ejaculation has been premature; but, with the exception of pain in the back, there have been no signs of spinal exhaustion. The urethra has been very sensitive, but there has been no stricture. The measures employed were the same as those resorted to in the preceding case, with the addition of a hot sitz-bath at night. He was ordered to be awakened early in the morning, with the view to empty his bladder. The lumbar pain ceased after the fourth insertion of the bougie; and when I saw him, three weeks subsequently, he told me that he had been entirely free from pollutions.

Of the local lesions causative of nocturnal pollutions, by far the most rebellious to treatment which I have encountered is chronic inflammation of the seminal vesicles, of which the following is an instance:—

CASE XXXIV. A man, twenty-two years of age, contracted gonorrhœa, which extended to the vesicles, where it set up acute

inflammation. When he came to me, the acute signs had subsided, and for three months he had had painful pollutions, which frequently occurred two and three times during the night, when they left a yellowish-red stain upon his linen. There was a constant sense of fulness and bearing-down pain in the rectum. The pain was increased by urination, defecation, and erections. The rectal touch disclosed two ovoidal, hot, and very tender bodies in the region of the vesicles; and there was a discharge of muco-purulent fluid from the urethra. Under sedative measures, and the local application of astringent solutions to the prostatic urethra, and of flying blisters to the perineum, I succeeded, after the expiration of seven months, in reducing the number of pollutions to one a week; and when I last saw him, three months afterwards, he had not had an emission for thirty days.

With the above exception, when the pollutions are maintained by local lesions, and are associated with signs of myelasthenia, the prognosis is good; but the patient will have to remain longer under treatment than when signs of nervous exhaustion are absent. The outlook is still favorable when symptoms of cerebrasthenia are present; but it is decidedly bad, if the subject is a sexual hypochondriac. Even when the emissions occur during the progress of acute or chronic general affections, the prognosis is not dismal, since I find that, in a case of progressive muscular atrophy and commencing bulbar paralysis, Stéphanides succeeded in checking them by the internal exhibition of atropia, and that Nowatschek was equally successful with the same remedy in an example of an aggravated form of spermatorrhœa, the result of typhus.

The prognosis is far better when the usual local lesion, namely, hyperæsthesia of the prostatic urethra, has been induced by gonorrhœa than when induced by masturba-

tion; and it is also more favorable when the emissions occur in mature years from sexual excesses than when they are due early in life to onanism, especially if the youthful subjects evince a tendency to inherited nervous disorders.

The outlook is more unfavorable when the pollutions occur during the day, or when the patient is awake, and when they are excited by slight mechanical or psychical causes, since under these circumstances the assumption is fair that the inflammation of the deep portion of the urethra has resulted in atony and dilatation of the muscular fibres which surround the orifices of the ejaculatory ducts. These cases are, however, quite amenable to properly directed measures, or even to the administration of atropia alone, as in the example of Nowatschek referred to above.

TREATMENT.—In all cases of involuntary seminal emissions certain hygienic and moral rules must be observed. The diet should be nutritious and digestible, the evening meal in particular being light and dry, and all stimulating articles of food as well as spirituous and malt liquors should be avoided. Before retiring, the bladder is to be thoroughly emptied, and the habit of sleeping on the side upon a hair mattress without much covering should be cultivated. As the morning fulness of the bladder has a very decided tendency to induce erections, and as emissions usually occur in the morning, the patient should set an alarm clock one hour before the time at which he has usually observed that the pollutions take place, in order that he may be awakened to relieve that viscus of its contents. Horseback exercise and driving over rough

roads should be interdicted. Masturbation, in which if the man be single he still in all probability indulges, and sexual intercourse must be abandoned, and the patient should be told that this enforced rest of the organs will possibly result in temporary increased frequency of the pollutions. Everything calculated to excite erotic thoughts and desire should be scrupulously avoided. With this end in view he should keep the mind and body pleasantly occupied; and if he happens to belong to the class of society that has nothing to do, and if he is still robust and vigorous, he should have recourse to gymnastic exercises, or to the close study of any subject which he may most fancy. If, on the other hand, there are commencing or marked signs of spinal exhaustion, mental and physical moderation should be enjoined.

An essential part of the treatment is the removal of any reflex or eccentric lesions or causes which predispose to the occurrence of seminal losses, or even excite them in impressible subjects. Hence the external genitalia and the anus and the rectum should be subjected to a careful examination. In many cases without the presence of a positive phimosis the redundant prepuce keeps the sensitive gland of the penis constantly moist, and favors the collection of sebaceous matter. The latter condition is very common among the lower classes, and whether circumcision be resorted to or not, and I always advise it, the greatest cleanliness should be enjoined. Herpes of the prepuce and gland usually readily yields to attention to the bowels and diet, and to dusting the parts with subnitrate of bismuth and calomel, or to touching the excoriations, if they should exist, with a five-grain solution of nitrate of silver, and dressing them afterwards with

scraped lint. If the meatus be contracted, or if a stricture be seated behind that orifice, it should be divided; and a short frenum should be clipped with the scissors. Internal piles should be ligated; external piles be opened; rectal fissure be divided or lacerated by overstretching the sphincter; and pruritus be remedied by cleanliness and the application of four grains of the bichloride of mercury to the ounce of water. A varicocele, between which and spermatorrhœa, however, I see no causal relation, should be properly suspended, or be subjected to subcutaneous ligation if it be large and annoying. Habitual constipation, which is met with in one-third of the cases, demands particular attention. If there is atony of the intestines, a pill, composed of two grains of compound extract of colocynth, half a grain of extract of *nux vomica*, and the tenth of a grain of extract of belladonna, may be administered at bedtime. In the majority of cases enemata of temperate water will fulfil the indication; or the patient may take two or three drachms of equal parts of Rochelle and Epsom salt in a tumbler of water before breakfast, or a wineglassful of Hunyadi water, or of an artificial mineral water composed of an ounce of sulphate of magnesia, a drachm of bitartrate of potassa, and ten grains of sulphate of iron to a quart of water. This was a favorite remedy of the late Professor Dunglison, and I can bear testimony to its efficacy.

Of the exciting causes of abnormal seminal losses by far the most constant and important are subacute or chronic inflammation and hyperæsthesia of the prostatic portion of the urethra and of the orifices of the ejaculatory ducts, conditions which are frequently maintained and aggravated by stricture of the passage anterior to them. Of

the treatment of stricture I can only refer to my views published elsewhere,¹ as its consideration would be out of place here; but I may add that, although the stricture may be palliated by dilatation, and although the emissions may entirely cease under the employment of that measure, they will be sure to recur unless the bougie is methodically employed during the remainder of life.

With regard to the inflammation and exaggerated sensibility and irritability of the prostatic urethra I need only say that the general and local measures for their relief do not differ in any respect from those indicated in the chapter on Impotence, pages 42-54.

In all cases of seminal incontinence, with rare exceptions, the remedies at the outset should be directed to overcoming the sensibility of the mucous membrane of the urethra, of the ejaculatory ducts, and of the seminal vesicles; to subduing the irritability of the muscles concerned in ejaculation; and to diminishing the reflex excitability of the genito-spinal centre. Hence, they should be of a calming and sedative nature. By the ignorant and indiscriminate employment of strychnia, cantharides, phosphorus, damiana, and cold sitz-baths or affusions during the stage of hyperæsthesia, much harm is done, and the therapeutics of spermatorrhœa are brought into disrepute. Premising the statement that the tonic should follow the sedative plan of treatment, I will now give an outline of my views as to the best management of the varieties of the affection.

Under all circumstances, thirty grains of bromide of potassium, along with about ten drops of the fluid extract

¹ Consult p. 45.

of gelsemium,¹ every eight hours, and one-sixtieth of a grain of sulphate of atropia² on retiring, are worth all the other internal remedies combined. In anemic subjects the bromide may be administered at night, and quinine and iron be exhibited during the day; but if the bromide be badly borne, it should be guarded in the manner which is indicated on page 51, or it may be replaced by twenty grains of chloral. Not only does atropia diminish the reflex mobility of the genito-spinal centre, but the recent researches of Keuchel, Heidenhain, and Stricker and Spina,³ show that it paralyzes the movements of the cells of the acinous glands and checks their secretion, so that it cannot be dispensed with.

Of the local remedies, the conical steel bougie⁴ occupies the first rank; but when the inflammation and tenderness are reduced to a circumscribed area which includes the openings of the ejaculatory ducts, it should give way to the application of nitrate of silver,⁵ a remedy which is usually decried by physicians who appear to have no practical experience with medication of the urethra, but which is highly recommended by such men as Trousseau,⁶ Niemeyer,⁷ C. Handfield Jones,⁸ and Rosenthal,⁹ and by the most eminent surgeons. In addition to these measures, the hot sitz-bath¹⁰ is invaluable; and Harrison¹¹ advises

¹ Bartholow, *op. cit.*, p. 415.

² Consult page 52.

³ Rosenthal, *Wiener Klinik*, May, 1880, p. 161.

⁴ Consult page 43.

⁵ Consult page 46.

⁶ *Op. cit.*, t. ii. p. 643.

⁷ *Text-Book of Practical Medicine*, New York, 1870, vol. ii. p. 100.

⁸ *Functional Nervous Disorders*, p. 733.

⁹ *Loc. cit.*, p. 162.

¹⁰ Consult page 53.

¹¹ *Op. cit.*, p. 62.

douching the lower part of the spine with water at the temperature of 120° F.

Under this course of treatment, the majority of cases of nocturnal pollutions recover; but it may happen that the reflex genital centre is still too impressible, in which case galvanization,¹ with the anode to the lumbar region and the cathode to the perineum,² will prove highly serviceable.

After the hyperæsthetic symptoms have subsided, if, from the occurrence of diurnal pollutions and of spermorrhagia, there is reason to suspect dilatation and atony of the mouths of the ejaculatory ducts, the continuous current, with the negative reophore in the rectum and the positive on the perineum or the lumbar vertebræ, affords the most striking results. This plan is recommended by Mobius;³ and in one case I succeeded in affording relief in twenty days by twelve sittings. Should galvanization prove inadequate, the induced current may be passed through a negative catheter electrode in the prostatic urethra to the anode placed on the perineum or spine; but this mode of application requires great caution,⁴ and care should be taken to employ a feeble power at the commencement. Hence I prefer, with Ultzmann,⁵ Rosenthal,⁶ and Mobius, to replace the urethral by the rectal reophore. In the absence of electrical apparatus, the tonicity of the muscles of the ejaculatory ducts may be greatly improved and even restored by the use of the psychrophor,⁷ by the application of nitrate of silver, and by

¹ Consult page 56.

² Benedikt, *Elektrotherapie*, p. 466.

³ *Memorabilien*, Heilbronn, 1879, 24, p. 545.

⁴ Consult page 57.

⁵ *Wiener Med. Presse*, 1876, p. 641.

⁶ *Loc. cit.*, p. 162.

⁷ Consult page 55.

cold sitz-baths,¹ and the injection of cold water against the perineum. In these cases of relaxation and atony of the ducts, ergot, which, if I do not mistake, was first employed by Mitchell,² of New York, is also indicated, half a drachm of the fluid extract being administered in water after each meal; and strychnia should also be given in gradually increasing doses. Fifteen drops of a mixture composed of six drachms of tincture of chloride of iron and two drachms of tincture of cantharides will also prove serviceable. With the curious device of Trousseau,³ namely, an ivory or vulcanite plug inserted into the rectum, I have had no experience, nor does it appear to have met with favor. The same writer refers to Richards' good results from forcible dilatation of the anus; and I can readily imagine that it would be productive of benefit, if there was spasm of the sphincter. Of the operation of castration, which some patients demand, and which some surgeons are weak enough to perform, I have only to say that I deem it unscientific and barbarous.

When spermatorrhœa is incident to organic lesions of the cerebro-spinal axis, or to convalescence from debilitating diseases, the treatment is that of the affection itself, with the addition of atropia and of bromide of potassium, if the latter remedy is not contraindicated.

To sum up the results of my experience in the management of abnormal seminal losses, I may add that the steel bougie, bromide of potassium, and atropia are especially adapted to cases of nocturnal emissions, and that

¹ Consult page 55.

² Amer. Med. Monthly, April, 1861, p. 282.

³ Op. cit., t. ii. p. 645.

electricity, ergot, and strychnia are the most reliable agents in diurnal pollutions and spermorrhagia.

After recovery moderation in sexual intercourse should be enjoined if the patient is married; matrimony should be advised if his circumstances and inclinations warrant it; and continence in thought and in action should be observed if he remains single.

CHAPTER IV.

PROSTATORRHŒA.

PROSTATORRHŒA, an affection which was first described by Professor Gross,¹ signifies an excessive secretion of a clear, viscous fluid, dependent upon chronic catarrhal inflammation of the tubular glands of the prostate. It is included by some authors in their descriptions of chronic prostatitis; but it is an entirely independent disease, as it does not follow an attack of acute inflammation, nor is it attended with suppuration or other morbid changes of the parenchyma of the organ.

In the majority of examples prostaticorrhœa is a complication of other disorders of the generative organs. Thus, of forty-six cases of which I have notes, in only twelve did it exist alone: while it was associated with nocturnal pollutions in two, of which Case XXX., p. 137, is an illustration; with emissions and various grades of impotence in thirty-one, of which Case XVI., page 40, is an instance; and with aspermatism in one, as in Case XXVIII., p. 125. Hence my account is limited to the disease in its pure form.

ETIOLOGY.—Of the twelve cases two began at the age of eighteen, eight between twenty and thirty, and two between thirty and forty years; while eleven of the sub-

¹ North American Med.-Chir. Rev., July, 1860, p. 693.

jects were single and one was married. In nine it was due to masturbation, in two to the extension of gonorrhœal inflammation, and in one to onanism practised early in life and to marital sexual excesses. In all there was exaggerated sensibility of the prostatic portion of the urethra, which was complicated by spasm of the compressor urethræ muscles in two, and by stricture in ten. In four there was one coarctation, which was seated within the first half an inch of the canal; and in six two strictures were detected, of which the first was near the meatus, and the second was in the bulbous urethra.

These observations correspond with those of Gross, who also states that the affection may be traced to disorders of the rectum, and that intemperance in eating and drinking, horseback exercise, drastic cathartics, cantharides, and spirits of turpentine, or, in short, whatever is likely to produce a determination of blood to the pelvic organs, tend to excite it. Ledwich¹ narrates a case in which it appears to have been occasioned by riding for several consecutive days in cold, damp weather; and both he and Lee² believe that the strumous diathesis predisposes to its occurrence; and others trace it to sedentary habits. While I cannot deny the accuracy of these statements, I may be permitted to express my conviction that none of the above-mentioned causes are capable of lighting up the affection independently of some preëxisting inflammation of the prostatic urethra.

CLINICAL HISTORY.—The most prominent symptom of the disease is the discharge of a clear, transparent, tena-

¹ Dublin Quart. Journ. of Med. Sci., vol. xxiv. p. 35.

² St. George's Hosp. Reps., vol. vi. p. 26.

cious fluid from the meatus, which may be constant in its appearance, but which is always expressed from the urethra during straining at stool and during the forcible expulsion of the last drops of urine, or even during sneezing, coughing, or laughing. The quantity of mucus secreted may be merely sufficient to induce an unpleasant sensation of wetness in the urethra and to agglutinate the lips of its orifice; or it may amount to a drachm or more during the twenty-four hours and keep the linen stained. However this may be, it is increased by riding, by driving, by alcoholic and malt liquors, and by the contraction of the perineal and other muscles during defecation and urination, when it may be discharged in a lump, or as a long, ropy mass. Under the microscope it will be found to

Fig. 16.



Prostatic crystals.

consist of mucous corpuscles, epithelial cells, and possibly a few leucocytes, and of minute, yellowish, concentric, amyloid concretions; and after it has slowly dried upon the slide crystals of phosphate of magnesium, as in fig.

13, page 84, or of ammonio-magnesian phosphate, as in fig. 16, from one of my patients, will make their appearance. These characters, along with the absence of spermatozoa, serve to distinguish it from semen and ordinary urethral discharges.

The escape of the fluid is occasionally attended with a pleasurable feeling of titillation; or there may be a dropping sensation in the urethra, which is due to reflex contraction of the muscular substance of the prostate induced by repletion of the glands with the secretion, and its consequent discharge into the prostatic sinus; or there may be a constant feeling of moisture in the canal. All of these abnormal sensations are increased by erections.

The only remaining local signs with which I have met were frequent and urgent desire to relieve the bladder in three; occasional scalding during urination in two; the loss of a few drops of blood at the end of the act in two; painful ejaculation in one; a sense of weight and fulness in the rectum after stool in two; and dull pains in the perineum, which were increased by exercise, especially in warm weather, in two. Hence, with the exception of pains radiating from the pelvis through the hips and thighs, and a constant sense of uneasiness about the loins, these symptoms agree with those portrayed by Adams,¹ who described the affection as "Prostatitis from Onanism," and they are confirmatory of the observations of Gross.

Prostatorrhœa differs widely from the affections which have already been considered in the absence of signs which point to nervous exhaustion, as I have met with

¹ *Anatomy and Diseases of the Prostate Gland*, p. 48, 1851.

them in only one example, of which the following is a brief account:—

CASE XXXV. A banker, thirty-two years of age, had masturbated from his twelfth to his twenty-second year, when he married, and, to avoid having children, indulged in incomplete connection. At the expiration of six or eight months he began to be troubled with intermittent prostatic discharges at stool, and to experience fatigue on mental and physical exertion. When I saw him, ten years after the appearance of these symptoms, he was suffering from habitual constipation, indigestion, acid eructations, furred tongue, bad taste in the mouth, dizziness, *muscæ volitantes*, troubled and unrefreshing sleep, impairment of memory, almost constant pain in the back of the head, neck, and left shoulder, incapacity for mental exertion, muscular weakness of the limbs, constant pain in the back, a sensation of numbness along the outer side of the left thigh, and occasional flushes of heat. The prostatic discharge had been habitual for many years at the water-closet and during erections, and there was a sense of fulness and weight in the rectum. The prostatic urethra was morbidly sensitive, and the bulbous explorer defined strictures at one-third of an inch from the meatus, calibre 22, and at five inches and three-quarters, calibre 18.

Cases of a somewhat similar nature are narrated by Ledwich; but in these as well as in my own it should be remarked that the signs of nervous exhaustion were dependent upon natural and unnatural excesses, and were in no wise connected with the diseased condition of the prostate. In only two of the patients under my care were the bowels habitually costive; and in only one was there backache.

All of the twelve subjects, except that of the preceding case, consulted me under the fixed impression that they

were suffering from spermatic incontinence, so that their minds dwelt constantly on the discharge, and two were verging upon hypochondrism. I was, however, fortunate enough to convince them that the fluid was free from spermatozoa, and in this way succeeded in eliminating an element which would otherwise have perpetuated and aggravated the disease.

PATHOLOGICAL CHARACTERS.—In two patients, dead of phthisis, Ledwich succeeded in obtaining post-mortem examinations, and describes the appearances in the following terms: "The prostato-vesical plexus was full, and many of its branches varicose; the capsule of the prostate adhered intimately to its surface, and, on slicing the gland, it seemed soft, with large, open venous branches on the section, from which blood exuded, whilst the whole gland exhibited an augmented volume; the mucous membrane of its urethral aspect was red, soft, thickened, and villous, whilst the ducts could be distinguished with the unassisted eye; the uvula and trigone vesicæ were red and turbid, but the remainder of the bladder was healthy."

These cases, and they are the only ones on record of which I have any knowledge, demonstrate that the affection is essentially a chronic inflammation of the glandular apparatus of the prostate, with relaxation, and consequent dilatation of, the muscular fibres which surround the orifices of the ducts. Hence the discharge may be readily accounted for by the contraction of the muscular elements incited into action whenever the acini and ducts become distended by the abnormal secretion, or by the pressure exerted upon them during the first expulsive efforts of defecation and urination. This view is moreover confirmed

by the subjective and objective symptoms, of which the most characteristic is the morbid sensibility evoked by the introduction of a sound. In a few cases the urgent and frequent calls to empty the bladder, the scalding during the act, and the passage of drops of blood at its completion, point in the same direction, as does also the tumid and tender condition of the prostate, as elicited by rectal examination, with which I have met in two instances.

DIAGNOSIS.—If the patient be requested to pass the first two or three ounces of urine in a glass, that fluid will be found to contain delicate filiform shreds, which are sometimes more than half an inch in length, and which are muco-purulent casts of the follicles and ducts of the prostate. This highly characteristic sign of the affection, when considered in connection with the local signs and the minute examination of the discharge, the composition of which has already been sufficiently considered, is quite sufficient to establish the true nature of the trouble.

PROGNOSIS.—Prostatorrhœa is a most obstinate affection unless it is subjected to early and persevering treatment. Ordinarily the outlook, especially when the discharge is comparatively recent, is most favorable, as the disease does not evince any tendency to suppuration or other lesions of the body of the organ. This statement is substantiated by Case XVI., page 40, in which a discharge of two years' duration entirely ceased under appropriate measures in eight weeks. When mental disquietude and gloom are so great that the patient cannot be convinced that his malady is harmless, the prognosis is grave, and the management is most unsatisfactory.

TREATMENT.—When any lesion, as, for example, stricture, phimosis, or internal piles, which tends to maintain the disorder has been relieved, the therapeutics of catarrhal follicular prostatitis are essentially those of impotence and spermatorrhœa, the remedies being addressed to the relief of the morbid sensibility of the prostatic sinuses, the atony of the ducts, and the cessation of the discharge. To avoid needless repetition I will, therefore, merely indicate the measures which I have found to yield the best results.

The bowels should be kept in a soluble condition, and straining at the closet should be avoided. Driving, riding, and much walking, if prolonged exercise excites pain in the perineum, or aggravates it if it be present, alcoholic and malt liquors, and sexual intercourse and unnatural practices must be interdicted. If, however, the subject be married, and if he finds that coition is not attended with painful ejaculations, or that it does not increase the sensation of soreness in the perineum, it may be moderately indulged in.

In every instance, except two in which the affection was respectively of six and ten years' duration, the warm hip-bath,¹ the introduction of the bougie,² and the exhibition of bromide of potassium³ and atropia,⁴ combined with tincture of hysocyamus and bicarbonate of potassium if there were vesical irritability and scalding on urination, fulfilled the indications. Rosenthal,⁵ indeed, speaks more favorably of atropia in prostatic than in seminal dis-

¹ Consult p. 53.

² Consult p. 43.

³ Consult p. 51.

⁴ Consult p. 52.

⁵ Wiener Klinik, May, 1880, p. 160.

charges, and my own experience confirms his views. In the two exceptional cases, after the exaggerated sensibility of the prostatic urethra had been allayed by the preceding treatment, and the discharge was apparently kept up by an atonic and dilated state of the orifices of the ducts, I stopped the above-mentioned measures, but continued the atropia, and finally succeeded in effecting a cure by the administration of the fluid extract of ergot,¹ cold sitz-baths² morning and evening, the injection of thirty grains of nitrate of silver to the ounce,³ and the application of flying blisters to the perineum,⁴ which I consider indispensable. Winternitz recommends the psychrophor⁵ for this condition, and Lederer⁶ also regards it with favor; while Lee⁷ relies upon the injection of a solution composed of from two to four drachms of the liquor ferri persulphatis to eight ounces of water; and Ultzmann⁸ has obtained good results from the induced current with one reophore in the rectum. I have had no experience with these remedies, but think well of the last, and would employ it if the case resisted the measures which I have indicated.

¹ Consult p. 160.

² Consult p. 55.

³ Consult p. 46.

⁴ Consult p. 50.

⁵ Consult p. 55.

⁶ Wiener Med. Presse, 1879, p. 306.

⁷ Loc. cit., p. 34.

⁸ Wiener Klinik, May and June, 1879, p. 164.

INDEX.

ACETATE of lead in treatment of azoospermism, 113
Anæsthetic aspermatism, 126
 diagnosis of, 129
 prognosis of, 130
 treatment of, 131
Anorchidism, 88
Anus, affections of, as causes of impotence, 42
 of spermatorrhœa, 148
Aspermatism, 114
 anæsthetic, 126
 atonic, 123
 organic, 114
 psychical, 127
Atonic aspermatism, 128
 diagnosis of, 129
 prognosis of, 130
 treatment of, 130
 impotence, 20
 classification of, 29
 clinical history of, 30
 diagnosis of, 38
 etiology of, 21
 prognosis of, 40
 treatment of, 42
Atropia in treatment of impotence, 52
 of prostatorrhœa, 169
 of spermatorrhœa, 158
Azoospermism, 88
 diagnosis of, 107
 from abnormal states of semen, 95
 from anorchidism, 88
 from cryptorchidism, 90
 from defects of epididymes, 89
 from defects of vasa deferentia, 89

Azoospermism—
 from lesions of testes, 91
 from obliteration of epididymes, 92
 from obliteration of vasa deferentia, 92
 prognosis of, 110
 treatment of, 111

BICHLORIDE of mercury in treatment of azoospermism, 113
Bromide of potassium in treatment of impotence, 51
 of prostatorrhœa, 169
 of spermatorrhœa, 157

CANTHARIDES in treatment of spermatorrhœa, 160
Catheter-syringe, 48
Cerebrasthenia, 37
Conical bougie in treatment of impotence, 43
 of prostatorrhœa, 169
 of spermatorrhœa, 158
Constipation a cause of spermatorrhœa, 148
Cryptorchidism, 90
Crystals, prostatic, 164
 spermatic, 84
Cupped bougie, 49

DAMIANA in treatment of impotence, 55
Diurnal pollutions, 138

Ducts, ejaculatory, absence of, 115
 deviation of, 116
 occlusion of, 115

ELECTRICITY in treatment of
 impotence, 57
 of prostatorrhœa, 170
 of spermatorrhœa, 159

Epididymes, deficiency of, 89
 obliteration of, 92

Epididymitis, gonorrhœal, 94, 104

Erection, mechanism of, 17

Ergot in treatment of prostatorrhœa,
 170

of spermatorrhœa, 160

Exhaustion, spinal, 37

a cause of azoospermism, 97

Exploratory bougie, 38

FARADISM in treatment of impo-
 tence, 57
 of prostatorrhœa, 170
 of spermatorrhœa, 159

GALVANISM in treatment of
 azoospermism, 112
 of impotence, 56
 of spermatorrhœa, 159

Gelsemium in treatment of impotence,
 52

of spermatorrhœa, 157

Genito-spinal centre, 19

diminished excitability of, 20

increased excitability of, 134

Glycerole of tannin in treatment of
 impotence, 50

Gonorrhœa, a cause of impotence, 28

of prostatorrhœa, 163

of spermatorrhœa, 144

Gonorrhœal epididymitis, 94, 104

HERPES, a cause of spermator-
 rhœa, 147

Hyperæsthesia of the urethra, a cause
 of impotence, 21

of prostatorrhœa, 163

of spermatorrhœa, 145

IM POTENCE, 17

atonic, 20

organic, 69

paralytic, 35

psychical, 59

symptomatic, 66

Iodide of potassium in treatment of
 azoospermism, 113

Iodoform in treatment of azoosperm-
 ism, 113

Iron in treatment of impotence, 51, 54
 of prostatorrhœa, 170

of spermatorrhœa, 158, 160

Irritable weakness, 82

Irritation, spinal, 37

LAXATIVES in treatment of im-
 potence, 53
 of prostatorrhœa, 169
 of spermatorrhœa, 156

MASTURBATION, effects of, 21
 hyperæsthenia of urethra from,
 21

nervous disorders from, 27

prostatorrhœa from, 163

spermatorrhœa from, 144

stricture of urethra from, 23

Meatus, stricture of, a cause of sper-
 matorrhœa, 147

Misemission, 132

Monobromide of camphor in treat-
 ment of impotence, 52

Morphism, a cause of azoospermism,
 102

Myelasthenia, 37

NEURASTHENIA, a cause of
 azoospermism, 97

of impotence, 37

of prostatorrhœa, 165

of spermatorrhœa, 143

Nitrate of silver in treatment of im-
 potence, 46

of prostatorrhœa, 170

of spermatorrhœa, 158

Nocturnal pollutions, 135

ORGANIC aspermatism, 114
 diagnosis of, 128
 etiology of, 114

Organic aspermatism—
 prognosis of, 130
 treatment of, 130
 Organic impotence, 69

PENIS, lesions of, causes of impotence, 69
 Phimosis, a cause of aspermatism, 122
 of spermatorrhœa, 147
 Phthisis, a cause of azoospermism, 100
 Pollutions, diurnal, 138
 nocturnal, 135
 Porte-caustique, 49
 Porte-remède, 49
 Prostatic crystals, 164
 fluid, uses of, 82
 Prostatorrhœa, 162
 clinical history of, 163
 diagnosis of, 168
 etiology of, 162
 pathological characters of, 167
 prognosis of, 168
 treatment of, 169
 Psychological aspermatism, 127
 prognosis of, 130
 treatment of, 131
 impotence, 59
 treatment of, 65
 Psychospor in treatment of impotence, 55
 of prostatorrhœa, 170
 of spermatorrhœa, 159
 Purulent semen, 103

QUININE in treatment of impotence, 51, 54
 of spermatorrhœa, 158

RECTUM, affections of, causes of prostatorrhœa, 163
 of spermatorrhœa, 148

SEMEN, abnormal conditions of, 95-107
 colloid, 108
 composition of, 81
 purulent, 103, 109
 watery, 108

Sexual excesses, causes of azoospermism, 95
 of impotence, 29
 of prostatorrhœa, 163
 of spermatorrhœa, 145
 Sitz-bath, warm, in treatment of impotence, 53
 of prostatorrhœa, 169
 of spermatorrhœa, 158
 cold, in treatment of impotence, 55
 of prostatorrhœa, 170
 of spermatorrhœa, 160
 Spinal exhaustion, 37
 a cause of azoospermism, 97
 of impotence, 37
 of prostatorrhœa, 165
 of spermatorrhœa, 143
 Spermaspasm, 52
 Spermatic crystals, 84
 colic, 128
 Spermatocystitis, a cause of azoospermism, 103
 of spermatorrhœa, 148
 Spermatozoa, 83
 absence of, 95
 infertile, 97-101
 Spermatorrhœa, 134
 anatomical characters of, 149
 classification of, 134
 clinical history of, 139
 diagnosis of, 150
 etiology of, 143
 prognosis of, 151
 treatment of, 154
 Spermorrhagia, 138
 Sterility, 81
 classification of, 86
 from aspermatism, 114
 from azoospermism, 88
 from misemission, 132
 relative frequency of, 87
 Stricture of ejaculatory ducts, 116
 of urethra from masturbation, 23
 a cause of aspermatism, 120
 of prostatorrhœa, 163
 of spermatorrhœa, 147
 Strychnia in treatment of impotence, 54
 of spermatorrhœa, 160
 Sympexions, 118
 diagnosis of, 128
 treatment of, 130

Symptomatic impotence, 66

 prognosis of, 68

 treatment of, 68

Syphilis, a cause of azoospermism,
 102

TESTES, absence of, 88

 atrophy of, 91

 lesions of in azoospermism, 91

 in impotence, 78

 retained, 90

URETHRA, hyperæsthesia of, 23

 stricture of, 23

Urethral dilator, 43

Urethrotome, 43

VASA DEFERENTIA, defi-
 ciency of, 89

 obliteration of, 92

Veratrum viride in treatment of im-
 potence, 52

Vesication in impotence, 50
 in prostaticorrhœa, 170

THE END.

BARTHOLOW ON ELECTRICITY—Just Ready.

A PRACTICAL TREATISE ON ELECTRICITY IN ITS APPLICATIONS TO MEDICINE. By ROBERTS BARTHOLOW, A. M., M. D., LL. D., Professor of Materia Medica and General Therapeutics in the Jefferson Medical College of Philadelphia. In one very handsome octavo volume of about 300 pages, with numerous illustrations. Cloth, \$2 50.

The constantly increasing therapeutic use of electricity, and the absence of a concise guide suited to the wants of the general practitioner, have induced the author to prepare the present volume. His object has been to present the most advanced state of existing knowledge in a form divested of unnecessary technicalities, keeping constantly in view the practical needs of the student and physician.

As the volume is founded upon a course of lectures delivered in the Jefferson Medical College, its adaptation to its purpose is insured. Dr. Bartholow's power of lucid exposition is well known, and is particularly desirable in a subject such as this, treated from the standpoint of the general practitioner and not of the specialist.

MITCHELL ON DISEASES OF THE NERVOUS SYSTEM—Just Ready.

LECTURES ON DISEASES OF THE NERVOUS SYSTEM, ESPECIALLY IN WOMEN.

By S. WEIR MITCHELL, M. D., Physician to the Orthopædic Hospital and Infirmary for Diseases of the Nervous System. In one very handsome 12mo. volume of 238 pages, with five lithographic plates. Extra cloth, \$1 75.

It is needless to say that these lectures are extraordinarily rich in acute observation and sound instruction. The reputation of the author is a guarantee of that, and no reader will be disappointed. Nor can too much be said in praise of the admirable style of his medical writings, and each of these lectures reads with the finished grace of a polished essay. Indeed, the book throughout is so fascinating a one that it could not fail to be read entire by every one who begins its pages.—*Phila. Med. and Surg. Reporter*, May 7, 1881.

In this little book Dr. Mitchell has presented

in a very attractive form the result of original studies of well-known diseases of the nervous system, while others treat of disorders which have received little attention or have been ignored by medical writers. Dr. Mitchell's book certainly contains much information which can be obtained from no other source, which must lead to the more successful management of a class of disorders often extremely baffling, and which, withal, is so pleasantly put, that the reader cannot but feel regret as he turns the last page.—*Prof. Jas. Tyson in Penn Monthly*, May, 1881.

BUMSTEAD ON VENEREAL DISEASES—New Edition—Now Ready.

THE PATHOLOGY AND TREATMENT OF VENEREAL DISEASES. Including the results of recent investigations upon the subject. By FREEMAN J. BUMSTEAD, M. D., LL. D., late Professor of Venereal Diseases at the Coll. of Phys. and Surg., New York, etc. Fourth edition, revised and largely rewritten with the co-operation of R. W. TAYLOR, M. D., of New York, Prof. of Dermatology in the Univ. of Vermont. In one large and handsome 8vo. volume of 835 pages, with 138 illustrations. Cloth, \$4 75; leather, \$5 75; very handsome half Russia, raised bands, \$6 25.

This work is too well and favorably known to require much additional recommendation—without doubt the best standard work on venereal diseases in the English language.—*Edin. Med. Journ.*, Dec. 1880.

Each of the three previous editions, practical handbooks as well as scientific monographs, has ranked *facile princeps* among literary productions in the English language upon these topics. The present edition is a marked advance upon

the preceding ones. The treatise has lost nothing by the addition of the advanced views, the active brain, and the industrious pen of the new co-editor, whose aim has been, through "bringing the volume up to date, by including all affections thus far known, in the shortest and clearest manner, to present a book worthy of the American medical profession."—*Boston Med. and Surg. Journ.*, Jan. 1880.

THOMAS ON WOMEN—New and Revised Edition—Just Ready.

A PRACTICAL TREATISE ON THE DISEASES OF WOMEN. By T. GAILLARD THOMAS, M. D., Prof. of Obstetrics, etc., in the College of Physicians and Surgeons, New York. Fifth edition, thoroughly revised and rewritten. In one large and handsome 8vo. vol. of 806 pages, with about 266 illustrations. Cloth, \$5; leather, \$6; very handsome half Russia, raised bands, \$6 50.

By common consent Prof. Thomas's work ranks as, all things considered, the best text-book of gynecology ever written. The work is so well known and highly esteemed that we need do but little more than point out the more noticeable of the new matter in this new edition. Besides the careful revision to which the whole has evidently been subjected, we notice a new chapter on General Considerations upon Uterine Pathology and Treatment, one on Congenital and Infan-

tile Malformations, one on Uterine Fungosities, one on Laceration of the Cervix, one on Oophorectomy, and one on Extra-uterine Pregnancy, together with a section on Adenoma of the Uterus. We would repeat that as a whole, the work is most admirable, and we would commend to the reader even those parts of it in which, as we believe, there is some error.—*N. Y. Med. Journ.*, March, 1881.

HENRY C. LEA'S SON & CO.—Philadelphia.

FLINT'S PRACTICE—New Edition—Just Ready.

A TREATISE ON THE PRINCIPLES AND PRACTICE OF MEDICINE; Designed for the use of Students and Practitioners of Medicine. By **AUSTIN FLINT, M.D.**, Professor of the Principles and Practice of Medicine in Bellevue Med. College, N. Y. Fifth edition, thoroughly revised and much improved. In one large and closely printed octavo volume of 1153 pages. Cloth, \$5 50; leather, \$6 50; very handsome half Russia, raised bands, \$7.

Its predominant good sense is one of the qualities which have caused Dr. Flint's treatise to be so highly esteemed; and as the present edition has all the merits of the earlier ones, and, in addition, a large amount of scientific as distinguished from clinical information which was less conspicuous in them, it cannot fail to confirm and increase the reputation of the work which they established. In a word, we do not know of any similar work which is at once so elaborate and so concise, so full and yet so accurate; or which in every part leaves upon the mind the impress of its being the product of an author richly stored with the fruits of clinical observation, and an adept in the art of conveying them clearly and attractively to others.—*Amer. Journ. Med. Sci.*, April, 1881.

With a view to meeting the requirements of the day the author has rather rewritten than

revised his work. Beyond the evident care with which numerous authorities have been consulted, together with its conspicuous clearness and precision of style, the work commends itself by a certain spirit of conservatism and strong common sense which is eminently characteristic of all the author's writings. A most reassuring freedom from prejudice and partisan spirit—a careful and unbiased criticism—expresses itself throughout. The exhaustiveness of the clinical histories and the practical manner in which diagnosis and treatment are discussed attest the author's great experience; at the same time thorough research has so far collected the important observations of other authors that reference to their books is rarely necessary. An excellent index saves the reader much time and trouble.—*N. Y. Med. Journ.*, May, 1881.

EMMET'S GYNÆCOLOGY—Second Edition—Just Ready.

THE PRINCIPLES AND PRACTICE OF GYNÆCOLOGY, for the use of Students and Practitioners of Medicine. By **THOMAS ADDIS EMMET, M.D.**, Surgeon to the Woman's Hospital, New York. Second edition, thoroughly revised. In one large and very handsome octavo volume of 875 pages, with 133 illustrations. Cloth, \$5; leather, \$6; half Russia, \$6 50.

That Dr. Emmet has a right to speak, that it is in fact his duty, and that his words should be words of wisdom, is manifest from a consideration of the extensive fields which it has been his good fortune to cultivate. As the result of an extraordinary experience, the author has collected facts and observations which give an air of authority to his teachings which at once commands our respect and attention. For the practitioner who is already somewhat posted on the

subject, it is a safe and, in the main, reliable guide, conservative, inculcating great care, and advising patience in following out treatment and in waiting for results, which can but have a good effect on the practitioner and through him on the patient. As a reference guide for the specialist and teacher it is simply invaluable—a rich mine which must be carefully worked.—*Am. Journ. of Obstet.*, Oct. 1880.

GROSS ON THE URINARY ORGANS—Lately Issued.

A PRACTICAL TREATISE ON THE DISEASES, INJURIES, AND MALFORMATIONS of the Urinary Bladder, the Prostate Gland, and the Urethra. By **SAMUEL D. GROSS, M.D.**, Professor of Surgery in the Jefferson Med. Coll., of Philadelphia. Third edition, thoroughly revised and condensed, by **SAMUEL W. GROSS, M.D.**, Surgeon to the Philadelphia Hospital. In one handsome octavo volume of 574 pages, with 170 illustrations. Cloth, \$4 50.

For reference and general information, the physician or surgeon can find no work that meets their necessities more thoroughly than this, a revised edition of an excellent treatise, and no medical library should be without it. Replete with handsome illustrations and good ideas, it has the unusual advantage of being

easily comprehended, by the reasonable and practical manner in which the various subjects are systematized and arranged. We heartily recommend it to the profession as a valuable addition to the important literature of diseases of the urinary organs.—*Atlanta Med. Journ.*, Oct. 1876.

FOTHERGILL'S HANDBOOK OF TREATMENT—Second Edition—Just Ready.

THE PRACTITIONER'S HANDBOOK OF TREATMENT; OR, THE PRINCIPLES OF THERAPEUTICS. By **J. MILNER FOTHERGILL, M.D.** Edinb., M.R.C.P. Lond., Asst. Physician to the West London Hospital; Asst. Physician to the City of London Hospital, &c. Second edition, revised and enlarged. In one very neat octavo volume of about 650 pages. Cloth, \$4; very handsome half Russia, raised bands, \$5.50.

The author merits the thanks of every well-educated physician for his efforts toward rationalizing the treatment of diseases upon the scientific basis of physiology. Every chapter, every line, has the impress of a master hand, and while the work is thoroughly scientific in every par-

ticular, it presents to the thoughtful reader all the charms and beauties of a well-written novel. No physician can well afford to be without this valuable work, for its originality makes it fill a niche in medical literature hitherto vacant.—*Nashville Journal of Med. and Surg.*, Oct. 1880.

HENRY C. LEA'S SON & CO.—Philadelphia.

HENRY C. LEA'S SON & CO.'S

(LATE HENRY C. LEA)

CLASSIFIED CATALOGUE

OF

MEDICAL AND SURGICAL PUBLICATIONS,

In asking the attention of the profession to the works advertised in the following pages, the publishers would state that no pains are spared to secure a continuance of the confidence earned for the publications of the house by their careful selection and accuracy and finish of execution.

The large number of inquiries received from the profession for a finer class of bindings than is usually placed on medical books has induced us to put certain of our standard publications in half Russia, and that the growing taste may be encouraged, the prices have been fixed at so small an advance over the cost of sheep, as to place it within the means of all to possess a library that shall have attractions as well for the eye as for the mind of the reading practitioner.

The printed prices are those at which books can generally be supplied by booksellers throughout the United States, who can readily procure for their customers any works not kept in stock. Where access to bookstores is not convenient, books will be sent by mail post-paid on receipt of the price, and as the limit of mailable weight has been removed, no difficulty will be experienced in obtaining through the post-office any work in this catalogue. No risks, however, are assumed, either on the money or on the books, and no publications but our own are supplied, so that gentlemen will in most cases find it more convenient to deal with the nearest bookseller.

HENRY C. LEA'S SON & CO.

Nos. 706 and 708 Sansom St., PHILADELPHIA, November, 1881.

INCREASED INDUCEMENT FOR SUBSCRIBERS TO THE AMERICAN JOURNAL OF THE MEDICAL SCIENCES.

TWO MEDICAL JOURNALS, containing nearly 2000 LARGE PAGES,

Free of Postage, for FIVE DOLLARS Per Annum.

TERMS FOR 1881.

| | | |
|--|---|-------------------------------------|
| THE AMERICAN JOURNAL OF THE MEDICAL SCIENCES, published quarterly (1150 pages per annum), with | } | Five Dollars per annum, in advance. |
| THE MEDICAL NEWS AND ABSTRACT, monthly (768 pp. per annum), | | |

SEPARATE SUBSCRIPTIONS TO

THE AMERICAN JOURNAL OF THE MEDICAL SCIENCES, when not paid for in advance, Five Dollars.

THE MEDICAL NEWS AND ABSTRACT, free of postage, in advance, Two Dollars and a Half.

*** Advance paying subscribers can obtain at the close of the year cloth covers, gilt-lettered, for each volume of the Journal (two annually), and of the News and Abstract (one annually), free by mail, by remitting ten cents for each cover.

It will thus be seen that for the moderate sum of FIVE DOLLARS in advance, the subscriber will receive, free of postage, the equivalent of four large octavo volumes, stored with the choicest matter, original and selected, that can be furnished by the medical literature of both hemispheres. Thus taken together, the "JOURNAL" and the "NEWS AND ABSTRACT" combine the advantages of the elaborate preparation that can be devoted to the Quarterly with the prompt conveyance of intelligence by the Monthly; while, the whole being under a single editorial supervision, the subscriber is secured against the duplication of matter inevitable when periodicals from different sources are taken together.

The periodicals thus offered at this unprecedented rate are universally known for

their high professional standing.

I.

THE AMERICAN JOURNAL OF THE MEDICAL SCIENCES,

EDITED BY I. MINIS HAYS, M.D.,

for more than half a century has maintained its position in the front rank of the medical literature of the world. Cordially supported by the profession of America, it circulates wherever the language is read, and is universally regarded as the national exponent of American medicine—a position to which it is entitled by the distinguished names from every section of the Union which are to be found among its collaborators.* It is issued quarterly, in January, April, July, and October, each number containing about three hundred octavo pages, appropriately illustrated wherever necessary. A large portion of this space is devoted to Original Communications, embracing papers from the most eminent members of the profession throughout the country.

Following this is the REVIEW DEPARTMENT, containing extended reviews by competent writers of prominent new works and topics of the day, together with numerous elaborate Analytical and Bibliographical Notices, giving a fairly complete survey of medical literature.

Then follows the QUARTERLY SUMMARY OF IMPROVEMENTS AND DISCOVERIES IN THE MEDICAL SCIENCES, classified and arranged under different heads, and furnishing a digest of medical progress, abroad and at home.

Thus during the year 1880 the "JOURNAL" contained 67 Original Communications, mostly elaborate in character, 170 Reviews and Bibliographical Notices, and 147 articles in the Quarterly Summaries, illustrated with 47 wood engravings.

That the efforts thus made to maintain the high reputation of the "JOURNAL" are successful, is shown by the position accorded to it in both America and Europe as the leading organ of medical progress:—

This is universally acknowledged as the leading American Journal, and has been conducted by Dr. Hays alone until 1869, when his son was associated with him. We quite agree with the critic, that this journal is second to none in the language, and cheerfully accord to it the first place, for nowhere shall we find more able and more impartial criticism, and nowhere such a repertory of able original articles. Indeed, now that the "British and Foreign Medical-Chirurgical Review" has terminated its career, the American Journal stands without a rival.—*London Med. Times and Gazette*, Nov. 24, 1877.

The best medical journal on the continent.—*Boston Med. and Surg. Journal*, April, 1879.

The present number of the American Journal is an exceedingly good one, and gives every promise of maintaining the well-earned reputation of the review. Our venerable contemporary has our best wishes, and we can only express the hope that it may continue its work with as much vigor and excellence for the next fifty years as it has exhibited in the past.—*London Lancet*, Nov. 24, 1877.

The Philadelphia Medical and Physical Journal issued its first number in 1820, and, after a brilliant career, was succeeded in 1827 by the American Journal of the Medical Sciences, a periodical of world-wide reputation; the ablest and one of the oldest periodicals in the world—a journal which has an unassailed record.—*Gross's History of American Med. Literature* 1876.

The best medical journal ever published in Europe or America.—*Va. Med. Monthly*, May, 1879.

It is universally acknowledged to be the leading American medical journal, and, in our opinion, is second to none in the language.—*Boston Med. and Surg. Journal*, Oct. 1877.

This is the medical journal of our country to which the American physician abroad will point with the greatest satisfaction, as reflecting the state of medical culture in his country. For a great many years it has been the medium through which our ablest writers have made known their discoveries and observations.—*Address of L. P. Yondall, M.D., before International Med. Congress*, Sept. 1876.

And that it was specifically included in the award of a medal of merit to the Publishers in the Vienna Exhibition in 1873.

The subscription price of the "AMERICAN JOURNAL OF THE MEDICAL SCIENCES" has never been raised during its long career. It is still FIVE DOLLARS per annum; and when paid for in advance, the subscriber receives in addition the "MEDICAL NEWS AND ABSTRACT," making in all nearly 2000 large octavo pages per annum, free of postage.

II.

THE MEDICAL NEWS AND ABSTRACT.

Thirty-eight years ago the "MEDICAL NEWS" was commenced as a monthly to convey to the subscribers of the "AMERICAN JOURNAL" the clinical instruction and

* Communications are invited from gentlemen in all parts of the country. Articles inserted by the Editor are liberally paid for by the publishers.

current information which could not be accommodated in the Quarterly. It consisted of sixteen pages of such matter, together with sixteen more known as the Library Department and devoted to the publishing of books. With the increased progress of science, however, this was found insufficient, and some years since another periodical, known as the "MONTHLY ABSTRACT," was started, and was furnished at a moderate price to subscribers to the "AMERICAN JOURNAL." These two monthlies have been consolidated, under the title of "THE MEDICAL NEWS AND ABSTRACT," and are furnished *free of charge* in connection with the "AMERICAN JOURNAL."

The "NEWS AND ABSTRACT" consists of 64 pages monthly, in a neat cover. It contains a CLINICAL DEPARTMENT in which will be continued the series of ORIGINAL AMERICAN CLINICAL LECTURES, by gentlemen of the highest reputation throughout the United States, together with a choice selection of foreign Lectures and Hospital Notes and Gleanings. Then follows the MONTHLY ABSTRACT, systematically arranged and classified, and presenting five or six hundred articles yearly; and each number concludes with an EDITORIAL and a NEWS DEPARTMENT, giving current professional intelligence, domestic and foreign, the whole fully indexed at the close of each volume, rendering it of permanent value for reference.

As stated above, the subscription price to the "NEWS AND ABSTRACT" is Two Dollars and a Half per annum, invariably in advance, at which rate it ranks as one of the cheapest medical periodicals in the country. But it is also furnished, free of all charge, in commutation with the "AMERICAN JOURNAL OF THE MEDICAL SCIENCES," to all who remit FIVE DOLLARS in advance, thus giving to the subscriber, for that very moderate sum, a complete record of medical progress throughout the world, in the compass of about two thousand large octavo pages.

In this effort to furnish so large an amount of practical information at a price so unprecedentedly low, and thus place it within the reach of every member of the profession, the publishers confidently anticipate the friendly aid of all who feel an interest in the dissemination of sound medical literature. They trust, especially, that the subscribers to the "AMERICAN MEDICAL JOURNAL," will call the attention of their acquaintances to the advantages thus offered, and that they will be sustained in the endeavor to permanently establish medical periodical literature on a footing of cheapness never heretofore attempted.

PREMIUM FOR OBTAINING NEW SUBSCRIBERS TO THE "JOURNAL."

Any gentleman who will remit the amount for two subscriptions for 1881, one of which at least must be for a *new subscriber*, will receive as a PREMIUM, free by mail, a copy of any one of the following recent works:—

- "SEILER ON THE THROAT" (see p. 19),
- "BARNES'S MANUAL OF MIDWIFERY" (see p. 24),
- "BROWNE ON THE USE OF THE OPHTHALMOSCOPE" (see p. 29),
- "FLINT'S ESSAYS ON CONSERVATIVE MEDICINE" (see p. 15),
- "STURGES'S CLINICAL MEDICINE" (see p. 15),
- "TANNER'S CLINICAL MANUAL" (see p. 5),
- "WEST ON NERVOUS DISORDERS OF CHILDREN" (see p. 21).

. Gentlemen desiring to avail themselves of the advantages thus offered will do well to forward their subscriptions at an early day, in order to insure the receipt of complete sets for the year 1881.

☞ The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. Where these are not accessible, remittances for the "JOURNAL" may be made at the risk of the publishers, by forwarding in REGISTERED letters. Address,

HENRY C. LEA'S SON & CO., Nos. 706 and 708 Sansom St., Phila., Pa.

DUNGLISON (ROBLEY), M.D.,*Late Professor of Institutes of Medicine in Jefferson Medical College, Philadelphia.*

MEDICAL LEXICON; A DICTIONARY OF MEDICAL SCIENCE: Containing a concise explanation of the various Subjects and Terms of Anatomy, Physiology, Pathology, Hygiene, Therapeutics, Pharmacology, Pharmacy, Surgery, Obstetrics, Medical Jurisprudence and Dentistry. Notices of Climate and of Mineral Waters; Formulae for Official, Empirical and Dietetic Preparations; with the Accentuation and Etymology of the Terms, and the French and other Synonymes; so as to constitute a French as well as English Medical Lexicon. A New Edition. Thoroughly Revised, and very greatly Modified and Augmented. By RICHARD J. DUNGLISON, M.D. In one very large and handsome royal octavo volume of over 1100 pages. Cloth, \$6 50; leather, raised bands, \$7 50; half Russia, \$8. (*Lately Issued.*)

The object of the author from the outset has not been to make the work a mere lexicon or dictionary of terms, but to afford, underneath, a condensed view of its various medical relations, and thus to render the work an epitome of the existing condition of medical science. Starting with this view, the immense demand which has existed for the work has enabled him, in repeated revisions, to augment its completeness and usefulness, until at length it has attained the position of a recognized and standard authority wherever the language is spoken.

Special pains have been taken in the preparation of the present edition to maintain this enviable reputation. During the ten years which have elapsed since the last revision, the additions to the nomenclature of the medical sciences have been greater than perhaps in any similar period of the past, and up to the time of his death the author labored assiduously to incorporate everything requiring the attention of the student or practitioner. Since then, the editor has been equally industrious, so that the additions to the vocabulary are more numerous than in any previous revision. Especial attention has been bestowed on the accentuation, which will be found marked on every word. The typographical arrangement has been much improved, rendering reference much more easy, and every care has been taken with the mechanical execution. The work has been printed on new type, small but exceedingly clear, with an enlarged page, so that the additions have been incorporated with an increase of but little over a hundred pages, and the volume now contains the matter of at least four ordinary octavos.

A book well known to our readers, and of which every American ought to be proud. When the learned author of the work passed away, probably all of us feared lest the book should not maintain its place in the advancing science whose terms it defines. Fortunately, Dr. Richard J. Dunglison, having assisted his father in the revision of several editions of the work, and having been, therefore, trained in the methods and imbued with the spirit of the book, has been able to edit it, not in the patchwork manner so dear to the heart of book editors, so repulsive to the taste of intelligent book readers, but to edit it as a work of the kind should be edited—to carry it on steadily, without jar or interruption, along the grooves of thought it has travelled during its lifetime. To show the magnitude of the task which Dr. Dunglison has assumed and carried through, it is only necessary to state that more than six thousand new subjects have been added in the present edition.—*Phila. Med. Times*, Jan. 3, 1874.

About the first book purchased by the medical student is the Medical Dictionary. The lexicon explanatory of technical terms is simply a *sine qua non*. In a science so extensive, and with such collaterals as medicine, it is as much a necessity also to the practising physician. To meet the wants of students and most physicians, the dictionary must be condensed while comprehensive, and practical while perspicacious. It was because Dunglison's met these indications that it became at once the dictionary of general use wherever medicine was studied in the English language. In no former revision have the alterations and additions been so great. More than six thousand new subjects and terms have been added. The chief terms have been set in black letter, while the derivatives follow in small caps; an arrangement which greatly facilitates reference. We

may safely confirm the hope ventured by the editor "that the work, which possesses for him a filial as well as an individual interest, will be found worthy a continuance of the position so long accorded to it as a standard authority."—*Cincinnati Clinic*, Jan. 10, 1874.

It has the rare merit that it certainly has no rival in the English language for accuracy and extent of references.—*London Medical Gazette*.

As a standard work of reference, as one of the best, if not the very best, medical dictionary in the English language, Dunglison's work has been well known for about forty years, and needs no words of praise on our part to recommend it to the members of the medical, and, likewise, of the pharmaceutical profession. The latter especially are in need of such a work, which gives ready and reliable information on thousands of subjects and terms which they are liable to encounter in pursuing their daily avocations, but with which they cannot be expected to be familiar. The work before us fully supplies this want.—*Am. Journ. of Pharm.*, Feb. 1874.

A valuable dictionary of the terms employed in medicine and the allied sciences, and of the relations of the subjects treated under each head. It reflects great credit on its able American author, and well deserves the authority and popularity it has obtained.—*British Med. Journ.*, Oct. 31, 1874.

Few works of this class exhibit a grander monument of patient research and of scientific lore. The extent of the sale of this lexicon is sufficient to testify to its usefulness, and to the great service conferred by Dr. Robley Dunglison on the profession, and indeed on others, by its issue.—*London Lancet*, May 13, 1875.

HOBLYN (RICHARD D.), M.D.

A DICTIONARY OF THE TERMS USED IN MEDICINE AND THE COLLATERAL SCIENCES. Revised, with numerous additions, by ISAAC HAYS, M.D., Editor of the "American Journal of the Medical Sciences." In one large royal 12mo. volume of over 500 double-columned pages; cloth, \$1 50; leather, \$2 00.

It is the best book of definitions we have, and ought always to be upon the student's table.—*Southern Med. and Surg. Journal*.

RODWELL (G. F.), F.R.A.S., &c.

A DICTIONARY OF SCIENCE: Comprising Astronomy, Chemistry, Dynamics, Electricity, Heat, Hydrodynamics, Hydrostatics, Light, Magnetism, Mechanics, Meteorology, Pneumatics, Sound and Statics. Preeceded by an Essay on the History of the Physical Sciences. In one handsome octavo volume of 694 pages, with many illustrations: cloth, \$5.

A CENTURY OF AMERICAN MEDICINE, 1776-1876. By Doctors E. H. Clarke, H. J. Bigelow, S. D. Gross, T. G. Thomas and J. S. Billings. In one very handsome 12mo. volume of about 350 pages: cloth, \$2 25.

This work appeared in the pages of the *American Journal of the Medical Sciences* during the year 1876. As a detailed account of the development of medical science in America, by gentlemen of the highest authority in their respective departments, the profession will no doubt welcome it in a form adapted for preservation and reference.

NEILL (JOHN), M.D., and SMITH (FRANCIS G.), M.D.,

Prof. of the Institutes of Medicine in the Univ. of Penna.

AN ANALYTICAL COMPENDIUM OF THE VARIOUS BRANCHES OF MEDICAL SCIENCE; for the Use and Examination of Students. A new edition, revised and improved. In one very large and handsomely printed royal 12mo. volume, of about one thousand pages, with 374 wood-cuts, cloth, \$4; strongly bound in leather, with raised bands, \$4 75.

HARTSHORNE (HENRY), M.D.,

Professor of Hygiene in the University of Pennsylvania.

A CONSPECTUS OF THE MEDICAL SCIENCES; containing Handbooks on Anatomy, Physiology, Chemistry, Materia Medica, Practical Medicine, Surgery and Obstetrics. Second Edition, thoroughly revised and improved. In one large royal 12mo. volume of more than 1000 closely printed pages, with 477 illustrations on wood. Cloth, \$4 25; leather, \$5 00.

We can say with the strictest truth that it is the best work of the kind with which we are acquainted. It embodies in a condensed form all recent contributions to practical medicine, and is therefore useful to every busy practitioner throughout our country, besides being admirably adapted to the use of students of medicine. The book is faithfully and ably executed.—*Charleston Med. Journ.*, April, 1876.

The work is intended as an aid to the medical student, and as such appears to admirably fulfil its object by its excellent arrangement, the full compilation of facts, the perspicuity and terseness of language, and the clear and instructive illustrations in some parts of the work.—*American Journ. of Pharmacy*, Philadelphia, July, 1874.

The volume will be found useful, not only to students, but to many others who may desire to refresh their memories with the smallest possible expenditure of time.—*N. Y. Med. Journal*, Sept. 1874.

The student will find this the most convenient and useful book of the kind on which he can lay his hand.—*Pacific Med. and Surg. Journ.*, Aug. 1874.

This is the handbook of its kind that we have ever examined. It is an honest, accurate, and concise compend of medical sciences, as fairly as possible representing their present condition. The changes and the additions have been so judicious and thorough as to render it, so far as it goes, entirely trust-

worthy. If students must have a conspectus, they will be wise to procure that of Dr. Hartshorne.—*Detroit Rev. of Med. and Pharm.*, Aug. 1874.

The work before us has many redeeming features not possessed by others, and is the best we have seen. Dr. Hartshorne exhibits much skill in condensation. It is well adapted to the physician in active practice, who can give but limited time to the familiarizing of himself with the important changes which have been made since he attended lectures. The manual of physiology has also been improved and gives the most comprehensive view of the latest advances in the science possible in the space devoted to the subject. The mechanical execution of the book leaves nothing to be wished for.—*Pennsylv. Journal of Medicine*, Sept. 1874.

After carefully looking through this conspectus, we are constrained to say that it is the most complete work, especially in its illustrations, of its kind that we have seen.—*Michigan Lancet*, Sept. 1874.

The favor with which the first edition of this Compendium was received, was an evidence of its various excellences. The present edition bears evidence of a careful and thorough revision. Dr. Hartshorne possesses a happy faculty of seizing upon the salient points of each subject, and of presenting them in a concise and yet perspicuous manner.—*London North Med. Herald*, Oct. 1874.

LUDLOW (J. L.), M.D.

A MANUAL OF EXAMINATIONS upon Anatomy, Physiology, Surgery, Practice of Medicine, Obstetrics, Materia Medica, Chemistry, Pharmacy and Therapeutics. To which is added a Medical Formulary. Third edition, thoroughly revised and greatly extended and enlarged. With 370 illustrations. In one handsome royal 12mo. volume of 816 large pages. Cloth, \$3 25; leather, \$3 75.

The arrangement of this volume in the form of question and answer renders it especially suitable for the office examination of students, and for those preparing for graduation.

TANNER (THOMAS HAWKES), M.D., Jr.

A MANUAL OF CLINICAL MEDICINE AND PHYSICAL DIAGNOSIS. Third American from the Second London Edition. Revised and Enlarged by THOMAS FOX, M.D., Physician to the Skin Department in University College Hospital, London, &c. In one neat volume, small 12mo., of about 375 pages, cloth, \$1 50.

* * * On page 3, it will be seen that this work is offered as a premium for procuring new subscribers to the "*AMERICAN JOURNAL OF THE MEDICAL SCIENCES*."

GRAY (HENRY), F.R.S.,*Lecturer on Anatomy at St. George's Hospital, London.***ANATOMY, DESCRIPTIVE AND SURGICAL. The Drawings by**

H. V. CARTER, M.D., and Dr. WESTMACOTT. The Dissections jointly by the Author and Dr. CARTER. With an Introduction on General Anatomy and Development by T. HOLMES, M.A., Surgeon to St. George's Hospital. A new American, from the Eighth enlarged and improved London edition. To which is added the Second American from the latest English Edition of "LANDMARKS, MEDICAL AND SURGICAL," by LUTHER HOLDEN, F.R.C.S., author of "Human Osteology," "A Manual of Dissections," etc. In one magnificent imperial octavo volume of 983 pages, with 522 large and elaborate engravings on wood. Cloth, \$6; leather, raised bands, \$7; half Russia, \$7 50.

The author has endeavored in this work to cover a more extended range of subjects than is customary in the ordinary text-books, by giving not only the details necessary for the student, but also the application of those details in the practice of medicine and surgery, thus rendering it both a guide for the learner, and an admirable work of reference for the active practitioner. The engravings form a special feature in the work, many of them being the size of nature, nearly all original, and having the names of the various parts printed on the body of the cut, in place of figures of reference, with descriptions at the foot. They thus form a complete and splendid series, which will greatly assist the student in obtaining a clear idea of Anatomy, and will also serve to refresh the memory of those who may find in the exigencies of practice the necessity of recalling the details of the dissecting room; while combining, as it does, a complete Atlas of Anatomy, with a thorough treatise on systematic, descriptive and applied Anatomy, the work will be found of essential use to all physicians who receive students in their offices, relieving both preceptor and pupil of much labor in laying the groundwork of a thorough medical education.

Since the appearance of the last American Edition, the work has received three revisions at the hands of its accomplished editor, Mr. Holmes, who has sedulously introduced whatever has seemed requisite to maintain its reputation as a complete and authoritative standard text-book and work of reference. Still further to increase its usefulness, there has been appended to it the recent work by the distinguished anatomist, Mr. Luther Holden—"Landmarks, Medical and Surgical"—which gives in a clear, condensed and systematic way, all the information by which the practitioner can determine from the external surface of the body the position of internal parts. Thus complete, the work, it is believed, will furnish all the assistance that can be rendered by type and illustration in anatomical study. No pains have been spared in the typographical execution of the volume, which will be found in all respects superior to former issues. Notwithstanding the increase of size, amounting to over 100 pages and 57 illustrations, it will be kept, as heretofore, at a price rendering it one of the cheapest works ever offered to the American profession.

The recent work of Mr. Holden, which was noticed by us on p. 53 of this volume, has been added as an appendix, so that, altogether, this is the most practical and complete anatomical treatise available to American students and physicians. The former finds in it the necessary guide in making dissections; a very comprehensive chapter on minute anatomy; and about all that can be taught him on general and special anatomy; while the latter, in its treatment of each region from a surgical point of view, and in the valuable addition of Mr. Holden, will find all that will be essential to him in his practice.—*New Remedies*, Aug. 1878.

This work is as near perfection as one could possibly or reasonably expect any book intended as a text-book or a general reference book on anatomy to be. The American publisher deserves the thanks of the profession for appending the recent work of Mr. Holden, "Landmarks, Medical and Surgical," which has already been commended as a separate book. The latter work—treating of topographical anatomy—has become an essential to the library of every intelligent practitioner. We know of no book that can take its place, written as it is by a most distinguished anatomist. It would be simply a waste of words to say anything further in praise of Gray's Anatomy, the text-book in almost every medical college in this country, and the daily reference book of every practitioner who has occasion

to consult his books on anatomy. The work is simply indispensable, especially this present American edition.—*Va. Med. Monthly*, Sept. 1878.

The addition of the recent work of Mr. Holden, as an appendix, renders this the most practical and complete treatise available to American students, who find in it a comprehensive chapter on minute anatomy, about all that can be taught on general and special anatomy, while its treatment of each region, from a surgical point of view, in the valuable section by Mr. Holden, is all that will be essential to them in practice.—*Ohio Medical Recorder*, Aug. 1878.

It is difficult to speak in moderate terms of this new edition of "Gray." It seems to be as nearly perfect as it is possible to make a book devoted to any branch of medical science. The labors of the eminent men who have successively revised the eight editions through which it has passed, would seem to leave nothing for future editors to do. The addition of Holden's "Landmarks" will make it as indispensable to the practitioner of medicine and surgery as it has been heretofore to the student. As regards completeness, ease of reference, utility, beauty, and cheapness, it has no rival. No student should enter a medical school without it; no physician can afford to have it absent from his library.—*St. Louis Clin. Record*, Sept. 1878.

ALSO FOR SALE SEPARATE—

HOLDEN (LUTHER), F.R.C.S.,*Surgeon to St. Bartholomew's and the Foundling Hospitals.***LANDMARKS, MEDICAL AND SURGICAL. Second American,**

from the Latest Revised English Edition, with additions by W. W. KEEN, M.D., Prof. of Artistic Anatomy in the Penna. Academy of the Fine Arts, formerly Lecturer on Anatomy in the Phila. School of Anatomy. In one handsome 12mo. volume, of about 140 pages. Cloth, \$1.00. (Just Ready.)

HEATH (CHRISTOPHER), F.R.C.S.,*Teacher of Operative Surgery in University College, London.***PRACTICAL ANATOMY: A Manual of Dissections. From the**

Second revised and improved London edition. Edited, with additions, by W. W. KEEN, M.D., Lecturer on Pathological Anatomy in the Jefferson Medical College, Philadelphia. In one handsome royal 12mo. volume of 578 pages, with 247 illustrations. Cloth, \$3 50; leather, \$4 00.

ALLEN (HARRISON), M.D.*Professor of Physiology in the Univ. of Pa.*

A SYSTEM OF HUMAN ANATOMY: INCLUDING ITS MEDICAL and Surgical Relations. For the Use of Practitioners and Students of Medicine. With an Introductory Chapter on Histology. By E. O. SHAKESPEARE, M.D., Ophthalmologist to the Phila. Hosp. In one large and handsome quarto volume, with several hundred original illustrations on lithographic plates, and numerous wood-cuts in the text. (*Shortly.*)

In this elaborate work, which has been in active preparation for several years, the author has sought to give, not only the details of descriptive anatomy in a clear and condensed form, but also the practical applications of the science to medicine and surgery. The work thus has claims upon the attention of the general practitioner, as well as of the student, enabling him not only to refresh his recollections of the dissecting room, but also to recognize the significance of all variations from normal conditions. The marked utility of the object thus sought by the author is self-evident, and his long experience and assiduous devotion to its thorough development are a sufficient guarantee of the manner in which his aims have been carried out. No pains have been spared with the illustrations. Those of normal anatomy are from original dissections, drawn on stone by Mr. Hermann Faber, with the name of every part clearly engraved upon the figure, after the manner of "Holden" and "Gray," and in every typographical detail it will be the effort of the publishers to render the volume worthy of the very distinguished position which is anticipated for it.

ELLIS (GEORGE VINER).*Emeritus Professor of Anatomy in University College, London.*

DEMONSTRATIONS OF ANATOMY; Being a Guide to the Knowledge of the Human Body by Dissection. By GEORGE VINER ELLIS, Emeritus Professor of Anatomy in University College, London. From the Eighth and Revised London Edition. In one very handsome octavo volume of over 700 pages, with 256 illustrations. Cloth, \$4.25; leather, \$5.25. (*Lately Issued.*)

This work has long been known in England as the leading authority on practical anatomy, and the favorite guide in the dissecting-room, as is attested by the numerous editions through which it has passed. In the last revision, which has just appeared in London, the accomplished author has sought to bring it on a level with the most recent advances of science by making the necessary changes in his account of the microscopic structure of the different organs, as developed by the latest researches in textural anatomy.

Ellis's Demonstrations is the favorite text-book of the English student of anatomy. In passing through eight editions it has been so revised and adapted to the needs of the student that it would seem that it had almost reached perfection in this special line. The descriptions are clear, and the methods of pursuing anatomical investigations are given with such detail that the book is honestly entitled to its name.—*St. Louis Clinical Record*, June, 1879.

The success of this old manual seems to be as well deserved in the present as in the past volumes. The book seems destined to maintain yet for years

its leadership over the English manuals upon dissecting.—*Phila. Med. Times*, May 24, 1879.

As a dissector, or a work to have in hand and studied while one is engaged in dissecting, we regard it as the very best work extant, which is certainly saying a very great deal. As a text-book to be studied in the dissecting-room, it is superior to any of the works upon anatomy.—*Cincinnati Med. News*, May 24, 1879.

We most unreservedly recommend it to every practitioner of medicine who can possibly get it.—*Va. Med. Monthly*, June, 1879.

WILSON (ERASMUS), F.R.S.

A SYSTEM OF HUMAN ANATOMY, General and Special. Edited by W. H. GOBRECHT, M.D., Professor of General and Surgical Anatomy in the Medical College of Ohio. Illustrated with three hundred and ninety-seven engravings on wood. In one large and handsome octavo volume, of over 600 pages; cloth, \$4; leather, \$5.

SMITH (HENRY H.), M.D.,*Prof. of Surgery in the Univ. of Penna., &c.***and HORNER (WILLIAM E.), M.D.,***Late Prof. of Anatomy in the Univ. of Penna.*

AN ANATOMICAL ATLAS; Illustrative of the Structure of the Human Body. In one volume, large imperial octavo, cloth, with about six hundred and fifty beautiful figures. \$4 50.

SCHÄFER (EDWARD ALBERT), M.D.,*Assistant Professor of Physiology in University College, London.*

A COURSE OF PRACTICAL HISTOLOGY; Being an Introduction to the Use of the Microscope. In one handsome royal 12mo. volume of 304 pages, with numerous illustrations: cloth, \$2 00. (*Lately Issued.*)

HORNER'S SPECIAL ANATOMY AND HISTOLOGY. Eighth edition, extensively revised and modified. In 2 vols. 8vo., of over 1000 pages, with 320 wood-cuts: cloth, \$6 00.

SHARPEY AND QUAIN'S HUMAN ANATOMY. Revised, by JOSEPH LEIDY, M.D., Prof. of Anat. in Univ. of Penn. In two octavo vols. of about 1300 pages, with 511 illustrations. Cloth, \$6 00.

BELLAMY'S STUDENT'S GUIDE TO SURGICAL ANATOMY: A Text-book for Students preparing

for their Pass Examination. With engravings on wood. In one handsome royal 12mo. volume. Cloth, \$2 25.

CLELAND'S DIRECTORY FOR THE DISSECTION OF THE HUMAN BODY. In one small volume, royal 12mo. of 182 pages: cloth \$1 25.

HARTSHORNE'S HANDBOOK OF ANATOMY AND PHYSIOLOGY. Second edition, revised. In one royal 12mo. vol., with 220 wood-cuts; cloth \$1 75.

DALTON (J. C.), M.D.,*Professor of Physiology in the College of Physicians and Surgeons, New York, &c.*

A TREATISE ON HUMAN PHYSIOLOGY. Designed for the use of Students and Practitioners of Medicine. Seventh edition, thoroughly revised and rewritten, with about three hundred and sixty illustrations on wood. In one very beautiful octavo volume, of about 900 pages. (*Nearly Ready.*)

A few notices of the previous edition are appended.

Prof. Dalton has discussed conflicting theories and conclusions regarding physiological questions with a fairness, a fulness, and a conciseness which lend freshness and vigor to the entire book. But his discussions have been so guarded by a refusal of admission to those speculative and theoretical explanations, which at best exist in the minds of observers themselves as only probabilities, that none of his readers need be led into grave errors while making them a study.—*The Medical Record*, Feb. 19, 1876.

For clearness and perspicuity, Dalton's Physiology commended itself to the student years ago, and was a pleasant relief from the verbose productions which it supplanted. Physiology has, however, made many advances since then—and while the style has been preserved intact, the work in the present edition has been brought up fully abreast of the times. The new chemical notation and nomenclature have also been introduced into the present edition. Notwithstanding the multi-

plicity of text-books on physiology, this will lose none of its old time popularity. The mechanical execution of the work is all that could be desired.—*Peninsular Journal of Medicine*, Dec. 1875.

This popular text-book on physiology comes to us in its sixth edition with the addition of about fifty per cent. of new matter, chiefly in the departments of pathological chemistry and the nervous system, where the principal advances have been realized. With so thorough revision and additions, that keep the work well up to the times, its continued popularity may be confidently predicted, notwithstanding the competition it may encounter. The publisher's work is admirably done.—*St. Louis Med. and Surg. Journ.*, Dec. 1875.

The revision of this great work has brought it forward with the physiological advances of the day, and renders it, as it has ever been, the finest work for students' ex- tant.—*Nashville Journ. of Med. and Surg.*, Jan. 1876.

CARPENTER (WILLIAM B.), M.D., F.R.S., F.G.S., F.L.S.,*Registrar to University of London, &c.*

PRINCIPLES OF HUMAN PHYSIOLOGY; Edited by HENRY POWER,

M.B. Lond., F.R.C.S., Examiner in Natural Sciences, University of Oxford. A new American from the Eighth Revised and Enlarged English Edition, with Notes and Additions, by FRANCIS G. SMITH, M.D., Professor of the Institutes of Medicine in the University of Pennsylvania, &c. In one very large and handsome octavo volume, of 1083 pages, with two plates and 373 encls. on wood. Cloth, \$5 50; leather, \$6 50; half Russia, \$7.

We have been agreeably surprised to find the volume so complete in regard to the structure and functions of the nervous system in all its relations, a subject that, in many respects, is one of the most difficult of all, in the whole range of physiology, upon which to produce a full and satisfactory treatise of the class to which the one before us belongs. The additions by the American editor give to the work as it is a considerable value beyond that of the last English edition. In conclusion, we can give our cordial recommendation to the work as it now appears. The editors have, with their additions to the only work on physiology in our language that, in the fullest sense of the word, is the production of a philosopher as well as a physiologist, brought it up as fully as could be expected, if not desired, to the standard of our knowledge of its subject at the present day. It will deservedly maintain the place it has always had in the favor of the medical profession.—*Journ. of Nervous and Mental Disease*, April, 1877.

Such enormous advances have recently been made in our physiological knowledge, that what was perfectly

new a year or two ago, looks now as if it had been a received and established fact for years. In this encyclopedic way it is unrivalled. Here, as it seems to us, is the great value of the book; one is safe in sending a student to it for information on almost any given subject, perfectly certain of the fulness of information it will convey, and well satisfied of the accuracy with which it will there be found stated.—*London Med. Times and Gazette*, Feb. 17, 1877.

The merits of "Carpenter's Physiology" are so widely known and appreciated that we need only allude briefly to the fact that in the latest edition will be found a comprehensive embodiment of the results of recent physiological investigation. Care has been taken to preserve the practical character of the original work. In fact the entire work has been brought up to date, and bears evidence of the amount of labor that has been bestowed upon it by its distinguished editor, Mr. Henry Power. The American editor has made the latest additions, in order fully to cover the time that has elapsed since the last English edition.—*N. Y. Med. Journal*, Jan. 1877.

FOSTER (MICHAEL), M.D., F.R.S.,*Prof. of Physiology in Cambridge Univ., England.*

TEXT-BOOK OF PHYSIOLOGY. Second American from the Latest

English Edition. Edited, with Extensive Notes and Additions, by EDWARD T. REICHERT, M.D., Late Demonstrator of Experimental Therapeutics in the Univ. of Penna. In one handsome royal 12mo. volume of about 1000 pages, with 260 illustrations. Cloth, \$3 25; leather, \$3 75. (*Just Ready.*)

In the preparation of a second American edition of Mr. Foster's Physiology, the editor has endeavored to render it more than ever acceptable to the student as a clear and comprehensive text-book, presenting the science in its latest developments. The original work being an exposition of abstract physiology without any reference to the details of physiological anatomy, it seemed desirable to introduce some account of structure, in order to render more intelligible to the student the views and theories of the science. This the editor has added, in as concise a manner as possible; and in aid of this end has freely introduced illustrations from recognized authorities.

LEHMANN'S MANUAL OF CHEMICAL PHYSIOLOGY. Translated from the German, with Notes and Additions, by J. CHESTON MORRIS, M.D. With illustrations on wood. In one octavo volume of 336 pages. Cloth, \$2 25.

LEHMANN'S PHYSIOLOGICAL CHEMISTRY. Complete in two large octavo volumes of 1200 pages, with 200 illustrations; cloth, \$6.

ATTFIELD (JOHN), Ph.D.,*Professor of Practical Chemistry to the Pharmaceutical Society of Great Britain, &c.***CHEMISTRY, GENERAL, MEDICAL AND PHARMACEUTICAL;**

Including the Chemistry of the U. S. Pharmacopœia. A Manual of the General Principles of the Science, and their Application to Medicine and Pharmacy. Eighth edition, revised by the author. In one handsome royal 12mo. volume of 700 pages, with illustrations. Cloth, \$2 50; leather, \$3 00. (*Now Ready.*)

We have repeatedly expressed our favorable opinion of this work, and on the appearance of a new edition of it, little remains for us to say, except that we expect this eighth edition to be as indispensable to us as the seventh and previous editions have been. While the general plan and arrangement have been adhered to, new matter has been added covering the observations made since the former edition. The present differs from the preceding one chiefly in these alterations and in about ten pages of useful tables added in the appendix. —*Am. Journ. of Pharmacy*, May, 1879.

A standard work like Attfield's Chemistry need only be mentioned by its name, without further comments. The present edition contains such alterations and additions as seemed necessary for the demonstration of the latest developments of chemical principles, and the latest applications of chemistry to pharmacy. The author has bestowed arduous labor on the revision, and the extent of the information thus introduced may be estimated from the fact that the Index contains three hundred new references relating to additional material. —*Druggists' Circular and Chemical Gazette*, May, 1879.

This very popular and meritorious work has now reached its eighth edition, which fact speaks in the highest terms in commendation of its excellence. It has now become the principal text-book

of chemistry in all the medical colleges in the United States. The present edition contains such alterations and additions as seemed necessary for the demonstration of the latest developments of chemical principles, and the latest applications of chemistry to pharmacy. It is scarcely necessary for us to say that it exhibits chemistry in its present advanced state. —*Cincinnati Medical News*, April, 1879.

The popularity which this work has enjoyed is owing to the original and clear disposition of the facts of the science, the accuracy of the details, and the omission of much which freights many treatises heavily without bringing corresponding instruction to the reader. Dr. Attfield writes for students, and primarily for medical students; he always has an eye to the pharmacopœia and its official preparations; and he is continually putting the matter in the text so that it responds to the questions with which each section is provided. Thus the student learns easily, and can always refresh and test his knowledge. —*Med. and Surg. Reporter*, April 19, '79.

We noticed only about two years and a half ago the publication of the preceding edition, and remarked upon the exceptionally valuable character of the work. The work now includes the whole of the chemistry of the pharmacopœia of the United States, Great Britain, and India. —*New Remedies*, May, 1879.

GREENE (WILLIAM H.), M.D.,*Demonstrator of Chemistry in Med. Dept., Univ. of Penna.***A MANUAL OF MEDICAL CHEMISTRY. For the Use of Students.**

Based upon Bowman's Medical Chemistry. In one royal 12mo. volume of 312 pages. With illustrations. Cloth, \$1 75. (*Now Ready.*)

It is well written, and gives the latest views on vital chemistry, a subject with which most physicians are not sufficiently familiar. To those who may wish to improve their knowledge in that direction, we can heartily recommend this work as being worthy of careful perusal. —*Phila. Med. and Surg. Reporter*, April 24, 1880.

The little work before us is one which we think will be studied with pleasure and profit. The descriptions, though brief, are clear, and in most cases sufficient for the purpose. This book will, in nearly all cases, meet general approval. —*Am. Journ. of Pharmacy*, April, 1880.

CLASSEN (ALEXANDER),*Professor in the Royal Polytechnic School, Aix-la-Chapelle.***ELEMENTARY QUANTITATIVE ANALYSIS. Translated with**

notes and additions by EDGAR F. SMITH, Ph.D., Assistant Prof. of Chemistry in the Towne Scientific School, Univ. of Penna. In one handsome royal 12mo. volume, of 324 pages, with illustrations; cloth, \$2 00. (*Lately Issued.*)

It is probably the best manual of an elementary nature extant, inasmuch as its methods are the best. It teaches by examples, commencing with single determinations, followed by separations, and then

advancing to the analysis of minerals and such products as are met with in applied chemistry. It is an indispensable book for students in chemistry. —*Boston Journ. of Chemistry*, Oct. 1878.

GALLOWAY (ROBERT), F.C.S.,*Prof. of Applied Chemistry in the Royal College of Science for Ireland, &c.***A MANUAL OF QUALITATIVE ANALYSIS. From the Fifth London Edition.**

In one neat royal 12mo. volume, with illustrations; cloth, \$2 75.

REMSEN (IRA), M.D., Ph.D.,*Professor of Chemistry in the Johns Hopkins University, Baltimore.***PRINCIPLES OF THEORETICAL CHEMISTRY, with special reference**

to the Constitution of Chemical Compounds. In one handsome royal 12mo. vol. of over 232 pages; cloth, \$1 50.

BOWMAN'S INTRODUCTION TO PRACTICAL CHEMISTRY, INCLUDING ANALYSIS. Sixth American, from the Sixth and revised London edition. With numerous illustrations. In one neat vol., royal 12mo., cloth, \$2 25.

WÖHLER AND FITTIG'S OUTLINES OF ORGANIC CHEMISTRY. Translated, with additions, from the Eighth German Edition. By IRA REMSEN, M.D., Ph.D., Prof. of Chemistry and Physics in Williams College, Mass. In one volume, royal 12mo. of 550 pp., cloth, \$3.

FOWNES (GEORGE), Ph.D.

A MANUAL OF ELEMENTARY CHEMISTRY; Theoretical and Practical. Revised and corrected by HENRY WATTS, B.A., F.R.S., author of "A Dictionary of Chemistry," etc. With a colored plate, and one hundred and seventy-seven illustrations. A new American, from the Twelfth and enlarged London edition. Edited by ROBERT BRIDGES, M.D. In one large royal 12mo. volume, of over 1000 pages; cloth, \$2 75; leather, \$3 25. (Lately Issued.)

This work, inorganic and organic, is complete in one convenient volume. In its earliest editions it was fully up to the latest advancements and theories of that time. In its present form, it presents, in a remarkably convenient and satisfactory manner, the principles and leading facts of the chemistry of to-day. Concerning the manner in which the various subjects are treated, much deserves to be said, and mostly, too, in praise of the book. A review of such a work as *Fownes's Chemistry* within the limits of a book-notice for a medical weekly is simply out of the question.—*Cincinnati Lancet and Clinic*, Dec. 14, 1878.

When we state that, in our opinion, the present edition sustains in every respect the high reputation which its predecessors have acquired and enjoyed, we express therewith our full belief in its intrinsic value as a text-book and work of reference.—*Am. Journ. of Pharm.*, Aug. 1878.

The conscientious care which has been bestowed upon it by the American and English editors renders it still, perhaps, the best book for the student and the practitioner who would keep alive the acquisitions of his student days. It has, indeed, reached a some-

what formidable magnitude with its more than a thousand pages, but with less than this no fair representation of chemistry as it now is can be given. The type is small but very clear, and the sections are very lucidly arranged to facilitate study and reference.—*Med. and Surg. Reporter*, Aug. 3, 1878.

The work is too well known to American students to need any extended notice; suffice it to say that the revision by the English editor has been faithfully done, and that Professor Bridges has added some fresh and valuable matter, especially in the inorganic chemistry. The book has always been a favorite in this country, and in its new shape bids fair to retain all its former prestige.—*Boston Jour. of Chemistry*, Aug. 1878.

It will be entirely unnecessary for us to make any remarks relating to the general character of *Fownes's Manual*. For over twenty years it has held the foremost place as a text-book, and the elaborate and thorough revisions which have been made from time to time leave little chance for any wide a water rival to step before it.—*Canadian Pharm. Jour.*, Aug. 1878.

As a manual of chemistry it is without a superior in the language.—*Md. Med. Jour.*, Aug. 1878.

BLOXAM (C. L.),

Professor of Chemistry in King's College, London.

CHEMISTRY, INORGANIC AND ORGANIC. From the Second London Edition. In one very handsome octavo volume, of 700 pages, with about 300 illustrations. Cloth, \$4 00; leather, \$5 00.

We have in this work a complete and most excellent text-book for the use of schools, and can heartily recommend it as such.—*Boston Med. and Surg. Journ.*, May 28, 1874.

The above is the title of a work which we can most conscientiously recommend to students of chemistry. It is as easy as a work on chemistry could be made, at the same time that it presents a full account of that science as it now stands. We have spoken of the work as admirably adapted to the wants of students; it is quite as well suited to the requirements of practitioners who wish to review their chemistry, or have occasion to refresh their memories on any point relating to it. In a word, it is a book to be read by all who wish to know what is the chemistry of the present day.—*American Practitioner*, Nov. 1873.

It would be difficult for a practical chemist and teacher to find any material fault with this most admirable treatise. The author has given us almost a cyclopaedia within the limits of a convenient volume, and has done so without penning the useless paragraphs too commonly making up a great part of the bulk of many cumbersome works. The progressive scientist is not disappointed when he looks for the record of new and valuable processes and discoveries, while the cautious conservative does not find its pages monopolized by uncertain theories and speculations. A peculiar point of excellence is the crystallized form of expression in which great truths are expressed in very short paragraphs. One is surprised at the brief space allotted to an important topic, and yet, after reading it, he feels that little, if any more should have been said. Altogether, it is seldom you see a text-book so nearly faultless.—*Cincinnati Lancet*, Nov. 1873.

CLOWES (FRANK), D.Sc., London.

Senior Science-Master at the High School, Newcastle-under-Lyme, etc.

AN ELEMENTARY TREATISE ON PRACTICAL CHEMISTRY AND QUALITATIVE INORGANIC ANALYSIS. Specially adapted for Use in the Laboratories of Schools and Colleges and by Beginners. Second American from the Third and Revised English Edition. In one very handsome royal 12mo. volume of 372 pages, with 47 illustrations. Cloth, \$2 50. (Just Ready.)

This is a valuable work for those about to commence chemistry, the more so as by its use they are simultaneously acquainted with the manipulation of chemical analysis, a method which is the most valuable to impart a thorough knowledge of chemistry. It is a very good little book, and will make for itself many warm friends and supporters. It treats the subject well and the tables are very clear and valuable.—*St. Louis Med. and Surg. Journ.*, Mar. 1881.

This work is not only well adapted for use as a text-book in medical colleges, but is also one of the best that a practitioner can have for convenient re-

ference and instruction in his library. As a rule, such volumes are too technical and abstruse for study without some didactic aid, but the volume presented is easy of comprehension, and will be of great value to college students and busy practitioners.—*N. Y. Am. Med. Et Weekly*, April 9, 1881.

The tables particularly demand praise, for they are admirably formed, both for convenience of reference and fulness of information. In short, we do not remember to have met with a book which could better serve the student as a guide to the systematic study of inorganic chemistry.—*Louisville Med. News*, March 12, 1881.

KNAPP'S TECHNOLOGY; or Chemistry Applied to the Arts and to Manufactures. With American additions by Prof. WALTER R. JOHNSON. In two

very handsome octavo volumes, with 500 wood engravings, cloth, \$6 00.

HOFFMAN (FRED.), Ph.D. and, POWER (FRED. B.), Ph.D.,

Prof. of Anat. Chem. in Phil. Coll. of Pharmacy.

MANUAL OF CHEMICAL ANALYSIS, as Applied to the Examination of Medical Chemicals and their Preparations. Being a Guide for the Determination of their Identity and Quality, and for the Detection of Impurities and Adulterations. For the Use of Pharmacists, Physicians, Druggists and Manufacturing Chemists, and Pharmaceutical and Medical Students. Third edition, entirely rewritten and much enlarged. In one very handsome octavo volume, fully illustrated. (*Preparing.*)

PARRISH (EDWARD),

Late Professor of Materia Medica in the Philadelphia College of Pharmacy.

A TREATISE ON PHARMACY. Designed as a Text-Book for the Student, and as a Guide for the Physician and Pharmacist. With many Formulae and Prescriptions. Fourth Edition, thoroughly revised, by THOMAS S. WIEGAND. In one handsome octavo volume of 977 pages, with 280 illustrations; cloth, \$5 50; leather, \$6 50; half Russia, \$7

Of Dr. Parrish's great work on pharmacy it only remains to be said that the editor has accomplished his work so well as to maintain, in this fourth edition, the high standard of excellence which it had attained in previous editions, under the editorship of its accomplished author. This has not been accomplished without much labor, and many additions and improvements, involving changes in the arrangement of the several parts of the work, and the addition of much new matter. With the modifications thus effected it constitutes, as now presented, a compendium of the science and art indispensable to the pharmacist, and of the utmost value to every practitioner of medicine desirous of familiarizing himself with the pharmaceutical preparation of the articles which he prescribes for his patients.—*Chicago Med. Journ.*, July, 1874.

The work is eminently practical, and has the rare merit of being readable and interesting, while it preserves a strictly scientific character. The whole work reflects the greatest credit on author, editor and pub-

lisher. It will convey some idea of the liberality which has been bestowed upon its production when we mention that there are no less than 280 carefully executed illustrations. In conclusion, we heartily recommend the work, not only to pharmacists, but also to the multitude of medical practitioners who are obliged to compound their own medicines. It will ever hold an honored place on our own bookshelves.—*Dublin Med. Press and Circular*, Aug. 12, 1874.

Perhaps one, if not the most important book upon pharmacy which has appeared in the English language has emanated from the transatlantic press. "Parrish's Pharmacy" is a well-known work on this side of the water, and the fact shows us that a really useful work never becomes merely local in its fame. Thanks to the judicious editing of Mr. Wiegand, the posthumous edition of "Parrish" has been saved to the public with all the mature experience of its author, and perhaps none the worse for a dash of new blood.—*Lond. Pharm. Journal*, Oct. 17, 1874.

GRIFFITH (ROBERT E.), M.D.

A UNIVERSAL FORMULARY, Containing the Methods of Preparing and Administering Official and other Medicines. The whole adapted to Physicians and Pharmacutists. Third edition, thoroughly revised, with numerous additions, by JOHN M. MAISCH, Professor of Materia Medica in the Philadelphia College of Pharmacy. In one large and handsome octavo volume of about 800 pages. Cloth, \$4 50; leather, \$5 50.

A more complete formulary than it is in its present form the pharmacist or physician could hardly desire. To the first some such work is indispensable, and it is hardly less essential to the practitioner who compounds his own medicines. Much of what is contained in the introduction ought to be com-

mitted to memory by every student of medicine. As a help to physicians it will be found invaluable, and doubtless will make its way into libraries not already supplied with a standard work of the kind.—*The American Practitioner*, Louisville, July, '74.

FARQUHARSON (ROBERT), M.D.,

Lecturer on Materia Medica at St. Mary's Hospital Medical School.

A GUIDE TO THERAPEUTICS AND MATERIA MEDICA. Second American edition, revised by the Author. Enlarged and adapted to the U. S. Pharmacopoeia. By FRANK WOODBURY, M.D. In one neat royal 12mo. volume of 498 pages; cloth, \$2.25. (*Lately Issued.*)

The appearance of a new edition of this convenient and handy book in less than two years may certainly be taken as an indication of its usefulness. Its convenient arrangement, and its terseness, and, at the same time, completeness of the information given, make it a handy book of reference.—*Am. Journ. of Pharmacy*, June 1879.

This work contains in moderate compass such well-digested facts concerning the physiological and therapeutical action of remedies as are reasonably established up to the present time. By a convenient arrangement the corresponding effects of each article in health and disease are presented in parallel columns, not only rendering reference easier, but also impressing the facts more strongly upon the mind of the reader. The book has been adapted to the wants of the American student, and

copious notes have been introduced, embodying the latest revision of the Pharmacopoeia, together with the antidotes to the more prominent poisons, and such of the newer remedial agents as seemed necessary to the completeness of the work. Tables of weights and measures, and a good alphabetical index, end the volume.—*Druggists' Circular and Chemical Gazette*, June, 1879.

It is a pleasure to think that the rapidity with which a second edition is demanded may be taken as an indication that the sense of appreciation of the value of reliable information regarding the use of remedies is not entirely overwhelmed in the cultivation of pathological studies, characteristic of the present day. This work certainly merits the success it has so quickly achieved.—*New Remedies*, July, '79.

CHRISTISON'S DISPENSATORY. With copious additions, and 218 large wood engravings. By R. ELLERSFIELD GRIFFITH, M.D. One vol. 8vo., pp. 1000 cloth, \$4 00.

CARPENTER'S PRIZE ESSAY ON THE USE OF ALCOHOLIC LIQUORS IN HEALTH AND DISEASE. New edition, with a Preface by D. F. CONDIE, M.D., and explanations of scientific words. In one neat 12mo. volume, pp. 178, cloth, 60 cents.

STILLÉ (ALFRED), M.D., LL.D., and MAISCH (JOHN M.), Ph.D.,
Prof. of Theory and Practice of Medicine and of Clinical Med. in Univ. of Pa. *Prof. of Mat. Med. and Bot. in Phila. Coll. Pharmacy, Secy. to the American Pharmaceutical Association.*

THE NATIONAL DISPENSATORY: Containing the Natural History, Chemistry, Pharmacy, Actions and Uses of Medicines, including those recognized in the Pharmacopœias of the United States, Great Britain and Germany, with numerous references to the French Codex. Second edition, thoroughly revised, with numerous additions. In one very handsome octavo volume of 1692 pages, with 239 illustrations. Extra cloth, \$6 75; leather, raised bands, \$7 50; half Russia, raised bands and open back, \$8 25. (Now Ready.)

PREFACE TO THE SECOND EDITION.

The demand which has exhausted in a few months an unusually large edition of the National Dispensatory is doubly gratifying to the authors, as showing that they were correct in thinking that the want of such a work was felt by the medical and pharmaceutical professions, and that their efforts to supply that want have been acceptable. This appreciation of their labors has stimulated them in the revision to render the volume more worthy of the very marked favor with which it has been received. The first edition of a work of such magnitude must necessarily be more or less imperfect; and though but little that is new and important has been brought to light in the short interval since its publication, yet the length of time during which it was passing through the press rendered the earlier portions more in arrears than the latter. The opportunity for a revision has enabled the authors to scrutinize the work as a whole, and to introduce alterations and additions wherever there has seemed to be occasion for improvement or greater completeness. The principal changes to be noted are the introduction of several drugs under separate headings, and of a large number of drugs, chemicals and pharmaceutical preparations classified as allied drugs and preparations under the heading of more important or better known articles: these additions comprise in part nearly the entire German Pharmacopœia and numerous articles from the French Codex. All new investigations which came to the authors' notice up to the time of publication have received due consideration.

The series of illustrations has undergone a corresponding thorough revision. A number have been added, and still more have been substituted for such as were deemed less satisfactory.

The new matter embraced in the text is equal to nearly one hundred pages of the first edition. Considerable as are these changes as a whole, they have been accommodated by an enlargement of the page without increasing unduly the size of the volume.

While numerous additions have been made to the sections which relate to the physiological action of medicines and their use in the treatment of disease, great care has been taken to make them as concise as was possible without rendering them incomplete or obscure. The doses have been expressed in the terms both of troy weight and of the metrical system, for the purpose of making those who employ the Dispensatory familiar with the latter, and paving the way for its introduction into general use.

The Therapeutical Index has been extended by about 2250 new references, making the total number in the present edition about 6000.

The articles there enumerated as remedies for particular diseases are not only those which, in the authors' opinion, are curative, or even beneficial, but those also which have at any time been employed on the ground of popular belief or professional authority. It is often of as much consequence to be acquainted with the worthlessness of certain medicines or with the narrow limits of their power, as to know the well attested virtues of others and the conditions under which they are displayed. An additional value possessed by such an Index is, that it contains the elements of a natural classification of medicines, founded upon an analysis of the results of experience, which is the only safe guide in the treatment of disease.

This evidence of success, seldom paralleled, shows clearly how well the authors have met the existing needs of the pharmaceutical and medical professions. Gratifying as it must be to them, they have embraced the opportunity offered for a thorough revision of the whole work, striving to embrace within it all that might have been omitted in the former edition, and all that has newly appeared of sufficient importance during the time of its collaboration, and the short interval elapsed since the previous publication. After having gone carefully through the volume we must admit that the authors have labored faithfully, and with success, in maintaining the high character of their work as a compendium meeting the requirements of the day, to which one can safely turn in quest of the latest information concerning everything worthy of notice in connection with Pharmacy, Materia Medica, and Therapeutics.—*Am. Jour. of Pharmacy*, Nov. 1879.

It is with great pleasure that we announce to our readers the appearance of a second edition of the National Dispensatory. The total exhaustion of the first edition in the short space of six months, is a sufficient testimony to the value placed upon the work by the profession. It appears that the rapid sale of the first edition must have induced both the editors and the publisher to make preparations for a new edition immediately after the first had been issued, for we find a large amount of new matter added and a good deal of the previous text altered and improved, which proves that the authors do not intend to let the grass grow under their feet, but to

keep the work up to the time.—*New Remedies*, Nov. 1879.

This is a great work by two of the ablest writers on materia medica in America. The authors have produced a work which, for accuracy and comprehensiveness, is unsurpassed by any work on the subject. There is no book in the English language which contains so much valuable information on the various articles of the materia medica. The work has cost the authors years of laborious study, but they have succeeded in producing a dispensatory which is not only national, but will be a lasting memorial of the learning and ability of the authors who produced it.—*Edinburgh Medical Journal*, Nov. 1879.

It is by far more international or universal than any other book of the kind in our language, and more comprehensive in every sense.—*Pacific Med. and Surg. Journ.*, Oct. 1879.

The National Dispensatory is beyond dispute the very best authority. It is throughout complete in all the necessary details, clear and lucid in its explanations, and replete with references to the most recent writings, where further particulars can be obtained, if desired. Its value is greatly enhanced by the extensive indices—a general index of materia medica, etc., and also an index of therapeutics. It would be a work of supererogation to say more about this well-known work. No practising physician can afford to be without the National Dispensatory.—*Canada Med. and Surg. Journ.*, Feb. 1880.

MAISCH (JOHN M.), *Phar. D.,**Prof. of Materia Medica and Botany in the Phila. Coll. of Pharmacy***A MANUAL OF ORGANIC MATERIA MEDICA.** Being a Guide to Materia Medica of the Vegetable and Animal Kingdoms. For the use of Students, Druggists, Pharmacists and Physicians. In one handsome 12mo. volume, with numerous illustrations on wood. (*Preparing.*)

EXTRACT FROM THE AUTHOR'S PREFACE.

When in 1866 the author was called to the chair of Materia Medica in the institution named (the Philadelphia College of Pharmacy), he seriously felt the need of a suitable text book which could be used in connection with his lectures, and made preparations for the publication of such a work at an early date. To elaborate a system of classification, which should be without difficulty comprehended and readily applied by those for whom it was intended, was by no means an easy task, and the author found occasion, almost every year, to either remodel that previously selected, or to make what in his opinion seemed to be desirable improvements. The publication of the "National Dispensary" in a measure supplied the want felt, at least as far as a work of reference is concerned, but owing to its local arrangement, it is not adapted to systematic instruction. However, its publication rendered a modification of the original plan for a treatise on Materia Medica desirable, and it is now presented in a form giving an outline of the substance of the lectures and embracing what are considered the essential physical, histological, and chemical characters of the organic drug, so as to render the work also a useful and reliable guide in business transactions. Regarding the classification, the author is conscious of its imperfections, but he believes it to be convenient and capable of practical application.

In reference to the scope of the work, the main aim has been to embrace all the drugs recognized by the U. S. Pharmacopœia, together with the old, but now unofficial ones, and such others, the use of which has been recently revived or suggested, and which seem to deserve attention. The medical properties and doses of the various drugs are merely briefly stated as subjects of general important information; the present work is not intended for giving instruction in the therapeutic application of drugs.

STILLÉ (ALFRED), M. D.,*Professor of Theory and Practice of Medicine in the University of Penna.***THERAPEUTICS AND MATERIA MEDICA; a Systematic Treatise** on the Action and Uses of Medicinal Agents, including their Description and History. Fourth edition, revised and enlarged. In two large and handsome 8vo. vols. of about 2000 pages. Cloth, \$10; leather, \$12; half Russia, \$13.

It is unnecessary to do much more than to announce the appearance of the fourth edition of this well known and excellent work.—*Brit. and For. Med.-Chir. Review*, Oct. 1875.

For all who desire a complete work on therapeutics and materia medica for reference, in cases involving medico-legal questions, as well as for information concerning remedial agents, Dr. Stillé's "par excellence" work. Being out of print, by the exhaustion of former editions, the author has laid the profession under renewed obligations, by the careful revision, important additions, and timely re-issuing a work not exactly supplemented by any other in the English language, if in any language. The mechanical execution handsomely sustains the well-known skill and good taste of the publisher.—*St. Louis Med. and Surg. Journal*, Dec. 1874.

From the publication of the first edition "Stillé's Therapeutics" has been one of the classics; its absence from our libraries would create a vacuum which could be filled by no other work in the language, and its presence supplies, in the two volumes

of the present edition, a whole cyclopædia of therapeutics.—*Chicago Medical Journal*, Feb. 1876.

The rapid exhaustion of three editions and the universal favor with which the work has been received by the medical profession, are sufficient proof of its excellence as a repository of practical and useful information for the physician. The edition before us fully sustains this verdict, as the work has been carefully revised and in some portions rewritten, bringing it up to the present time by the admission of chloral and croton-chloral, nitrite of amyl, bichloride of methylene, methylic ether, lithium compounds, gelsemium, and other remedies.—*Am. Journ. of Pharmacy*, Feb. 1875.

We can hardly admit that it has a rival in the multitude of its citations and the fulness of its research into clinical histories, and we must assign it a place in the physician's library; not, indeed, as fully representing the present state of knowledge in pharmacodynamics, but as by far the most complete treatise upon the clinical and practical side of the question.—*Boston Med. and Surg. Journal*, Nov. 5, 1874.

CORNIL (V.),*Prof. in the Faculty of Med., Paris.*

AND

RANVIER (L.),*Prof. in the College of France.***MANUAL OF PATHOLOGICAL HISTOLOGY.** Translated, with Notes and Additions, by E. O. SHAKESPEARE, M.D., Pathologist and Ophthalmic Surgeon to Philada. Hospital, Lecturer on Refraction and Operative Ophthalmic Surgery in Univ. of Penna., and by HENRY C. SIMES, M.D., Demonstrator of Pathological Histology in the Univ. of Pa. In one very handsome octavo volume of over 700 pages, with over 350 illustrations. Cloth, \$5 50; leather, \$6 50; half Russia, \$7. (*Just Ready.*)

We have no hesitation in cordially recommending the English translation of Cornil & Ranvier's "Pathological Histology" as the best work of the kind in any language, and as giving to its readers a trustworthy guide in obtaining a broad and solid basis for the appreciation of the practical bearings of pathological anatomy.—*Am. Journ. of Med. Sciences*, April, 1880.

This important work, in its American dress, is a welcome offering to all students of the subjects which it treats. The great mass of material is arranged naturally and comprehensively. The classification of tumors is clear and full, so far as

the subject admits of definition, and this one chapter is worth the price of the book. The illustrations are copious and well chosen. Without the slightest hesitation, the translators deserve honest thanks for placing this indispensable work in the hands of American students.—*Phila. Med. Times*, April 24, 1880.

This volume we cordially commend to the profession. It will prove a valuable, almost necessary, addition to the libraries of students who are to be physicians, and to the libraries of students who are physicians.—*American Practitioner*, June, 1880.

FENWICK (SAMUEL), M.D.,
Assistant Physician to the London Hospital.

THE STUDENT'S GUIDE TO MEDICAL DIAGNOSIS. From the Third Revised and Enlarged English Edition. With eighty-four illustrations on wood. In one very handsome volume, royal 12mo., cloth, \$2 25. (*Lately Issued.*)

GREEN (T. HENRY), M.D.,
Lecturer on Pathology and Morbid Anatomy at Charing-Cross Hospital Medical School, etc.

PATHOLOGY AND MORBID ANATOMY. Fourth American, from the Fifth Enlarged and Revised English Edition. In one very handsome octavo volume of about 350 pages, with 138 fine engravings; cloth, \$2 25. (*Just Ready.*)

EXTRACT FROM THE AUTHOR'S PREFACE.

In preparing the fifth edition of my Text-book on Pathology and Morbid Anatomy, I have again added much new matter, with the object of making the work a more complete guide for the student. All the chapters have been carefully revised, some alterations have been made in the arrangement of the work, and an addition has been made to the number of wood-cuts. The new wood-cuts, as in previous editions, have been drawn by Mr. Collings from my own microscopical preparations.

We have long considered this the best guide yet presented to the student for the identification of various morbid tissues. We have found it more satisfactory than any other. The present edition has been thoroughly revised, and much new matter has been added. To the physician as a guide in diagnosis, we recommend this volume.—*Physician and Surgeon*, May, 1881.

BRISTOWE (JOHN SYER), M.D., F.R.C.P.,
Physician and Joint Lecturer on Medicine, St. Thomas's Hospital.

A TREATISE ON THE PRACTICE OF MEDICINE. Second American edition, revised by the Author. Edited, with Additions, by JAMES H. HUTCHINSON, M.D., Physician to the Penna. Hospital. In one handsome octavo volume of nearly 1200 pages. With illustrations. Cloth, \$5 00; leather, \$6 00; half Russia, \$6 50. (*Now Ready.*)

The second edition of this excellent work, like the first, has received the benefit of Dr. Hutchinson's annotations, by which the phases of disease which are peculiar to this country are indicated, and thus a treatise which was intended for British practitioners and students is made more practically useful on this side of the water. We see no reason to modify the high opinion previously expressed with regard to Dr. Bristowe's work, except by adding our appreciation of the careful labors of the author in following the lateral growth of medical science.—*Boston Medical and Surgical Journal*, February, 1880.

What we said of the first edition, we can, with increased emphasis, repeat concerning this: "Every page is characterized by the utterances of a thoughtful man. What has been said, has been well said, and the book is a fair reflex of all that is *certainly known* on the subjects considered."—*Ohio Med. Recorder*, Jan. 7, 1880.

The views of the author are expressed with precision and sufficient promptness to impress the student with the weight of his authority; and should the medical professor differ on any subject from his doctrine, he will need to find strong arguments to carry his case to the opposite conclusion.—*N. O. Med. and Surg. Journ.*, Feb. 1880.

The reader will find every conceivable subject connected with the practice of medicine ably presented, in a style at once clear, interesting, and concise. The additions made by Dr. Hutchinson are appropriate and practical, and greatly add to its usefulness to American readers.—*Buffalo Med. and Surg. Journ.*, March, 1880.

We regard it as an excellent work for students and for practitioners. It is clearly written, the author's style is attractive, and it is especially to be commended for its excellent exposition of the pathology and clinical phenomena of disease.—*St. Louis Clin. Record*, Feb. 1880.

HABERSHON (S. O.) M.D.

Senior Physician to, and late Lecturer on the Principles and Practice of Medicine at, Guy's Hospital, etc.

ON THE DISEASES OF THE ABDOMEN, COMPRISING THOSE of the Stomach, and other parts of the Alimentary Canal, Oesophagus, Cæcum, Intestines and Peritoneum. Second American, from the Third enlarged and revised English edition. With illustrations. In one handsome octavo volume of over 500 pages. Cloth, \$3 50. (*Lately Issued.*)

This valuable treatise on diseases of the stomach and abdomen has been out of print for several years, and is therefore not so well known to the profession as it deserves to be. It will be found a cyclopædia of information, systematically arranged, on all diseases of the alimentary tract, from the mouth to the rectum. A fair proportion of each chapter is devoted to symptoms, pathology, and therapeutics. The present edition is fuller than former ones in many particulars, and has been thoroughly revised and

amended by the author. Several new chapters have been added, bringing the work fully up to the times, and making it a volume of interest to the practitioner in every field of medicine and surgery. Perverted nutrition is in some form associated with all diseases we have to combat, and we need all the light that can be obtained on a subject so broad and general. Dr. Habershon's work is one that every practitioner should read and study for himself.—*N. Y. Med. Journ.*, April, 1879.

GLUGE'S ATLAS OF PATHOLOGICAL HISTOLOGY. Translated, with Notes and Additions, by JOSEPH LEISER, M.D. In one volume, very large imperial quarto, with 320 copper-plate figures, plain and colored, cloth, \$4 00.

LA ROCHE ON YELLOW FEVER, considered in its Historical, Pathological, Etiological and Therapeutical Relations. In two large and handsome octavo volumes of nearly 1500 pp., cloth, \$7 00.

STOKES' LECTURES ON FEVER. Edited by JOHN WILLIAM MOORE, M.D., Assistant Physician to the Cork Street Fever Hospital. In one neat 8vo volume cloth, \$2 00.

PAYY'S TREATISE ON THE FUNCTION OF DIGESTION: Its Disorders and their Treatment. From the Second London edition. In one handsome volume, small octavo, cloth, \$2 00.

HOLLAND'S MEDICAL NOTES AND REFLECTIONS. 1 vol. 8vo., pp. 500, cloth, \$3 50.

BARLOW'S MANUAL OF THE PRACTICE OF MEDICINE. With Additions by D. E. CONDIS, M.D. 1 vol. 8vo., pp. 600, cloth, \$2 50.

TODD'S CLINICAL LECTURES ON CERTAIN ACUTE DISEASES. In one neat octavo volume, of 320 pp., cloth, \$2 50.

FLINT (AUSTIN), M.D.,

Professor of the Principles and Practice of Medicine in Bellevue Med. College, N. Y.

A TREATISE ON THE PRINCIPLES AND PRACTICE OF MEDICINE; designed for the use of Students and Practitioners of Medicine. Fifth edition, entirely rewritten and much improved. In one large and closely printed octavo volume of 1153 pp. Cloth, \$5 50; leather, \$6 50; very handsome half Russia, raised bands, \$7. (*Just Ready.*)

This work has been so long and favorably known, and has obtained so high a position amongst modern treatises on medicine, that it is hardly necessary to do more than announce the publication of this fifth edition. All who peruse it must be struck by the extensive research which has been undertaken in the revision of this edition, combined with much original thought. There is hardly a subject which does not receive fresh illustration and discussion, opening up new lines of inquiry which had not been thought of when the previous edition appeared. We cannot conclude this notice without expressing our admiration of this volume, which is certainly one of the standard text-books on medicine, and we may safely affirm that, taken altogether, it exhibits a fuller and wider acquaintance with recent pathological inquiry than any similar work with which we are acquainted, whilst at the same time it shows its author to be possessed of the rare faculties of clear exposition, thoughtful discrimination, and sound judgment.—*London Lancet*, July 23, 1881.

Practically, this edition is a new work; for so many additions and changes have been made that one well acquainted with previous editions would hardly recognize this as an old friend. The size of the volume is somewhat increased. An entire new section and several new chapters have been added. It is universally conceded that no text book upon this subject was ever published in this country that can at all compare with it. It has long been at the very head of American text-book literature, and there can be no doubt but that it will be many

years before it yields the place to others.—*Nashville Journ. of Med. and Surg.*, Feb. 1881.

"Flint's Practice" is recognized to be a standard treatise of high rank upon the principles and the practice of medicine wherever the English language is read. The opinions everywhere reveal the man of extensive experience, diligent study, calm judgment, and unbiassed criticism. The work should be in the hands of every practitioner.—*New York Med. Record*, Feb. 26, 1881.

The style and character of this work are too well known to the profession to require an introduction. For a number of years this volume has occupied a leading position as a text-book in the majority of medical schools, and the high position accorded to it in the past is a guarantee of a hearty welcome in this new edition. The book may be said to represent the present state of the science of medicine as now understood and taught. It is a safe guide to students and practitioners of medicine.—*Maryland Medical Journal*, March 1, 1881.

The author has, in this edition, revised and rewritten a great part and made it accord with the more advanced ideas which have been developed within the past few years. He is the more fitted to do so, as he is actively engaged in his profession, and can make deductions, not from the work of others, but from his own labors. It is a treatise which every American physician should have upon his table, and which he should consult on occasions when his leisure permits him to do so.—*St. Louis Med. and Surg. Journal*, March, 1881.

BY THE SAME AUTHOR.

CLINICAL MEDICINE; a Systematic Treatise on the Diagnosis and Treatment of Diseases. Designed for Students and Practitioners of Medicine. In one large and handsome octavo volume of 795 pages; cloth, \$4 50; leather, \$5 50; half Russia, \$6. (*Now Ready.*)

The eminent teacher who has written the volume under consideration has recognized the needs of the American profession, and the result is all that we could wish. The style in which it is written is peculiarly the author's; it is clear and forcible, and marked by those characteristics which have rendered him one of the best writers and teachers this country has ever produced. We have not space for so full a consideration of this remarkable work as we would desire.—*St. Louis Clin. Record*, Oct. 1879.

It is here that the skill and learning of the great clinician are displayed. He has given us a storehouse of medical knowledge, excellent for the student, convenient for the practitioner, the result of a long life of the most faithful clinical work, collected by an energy as vigilant and systematic as untiring, and weighed by a judgment no less clear than his observation is close.—*Archives of Medicine*, Dec. 1879.

To give an adequate and useful compact of the extensive field of modern clinical medicine is a task of no ordinary difficulty; but to accomplish this consistently, with brevity and clearness, the different subjects and their several parts receiving the attention which, relatively to their importance, medical opinion claims for them, is still more difficult. This task we feel bound to say has been executed with more than partial success by Dr. Flint, whose name is already familiar to students of advanced medicine

in this country as that of the author of two works of great merit on special subjects, and of numerous papers, exhibiting much originality and extensive research.—*The Dublin Journal*, Dec. 1879.

There is every reason to believe that this book will be well received. The active practitioner is frequently in need of some work that will enable him to obtain information in the diagnosis and treatment of cases with comparatively little labor. Dr. Flint has the faculty of expressing himself clearly, and at the same time so concisely as to enable the searcher to traverse the entire ground of his search, and at the same time obtain all that is essential, without plodding through an interminable space.—*N. Y. Med. Jour.*, Nov. 1879.

The great object is to place before the reader the latest observations and experience in diagnosis and treatment. Such a work is especially valuable to students. It is complete in its special design, and yet so condensed, that he can by its aid, keep up with the lectures on practice without neglecting other branches. It will not escape the notice of the practitioner that such a work is most valuable in culling points in diagnosis and treatment in the intervals between the daily rounds of visits, since he can in a few minutes refresh his memory, or learn the latest advance in the treatment of diseases which demand his instant attention.—*Cincinnati Lancet and Clinic*, Oct. 25, 1879.

BY THE SAME AUTHOR.

ESSAYS ON CONSERVATIVE MEDICINE AND KINDRED TOPICS. In one very handsome royal 12mo. volume. Cloth, \$1 38. (*Just Issued.*)

DAVIS'S CLINICAL LECTURES ON VARIOUS IMPORTANT DISEASES; being a collection of the Clinical Lectures delivered in the Medical Wards of Mercy Hospital, Chicago. Edited by FRANK H. DAVIS, M.D. Second edition, enlarged. In one handsome royal 12mo. volume. Cloth, \$1 75.

STURGES'S INTRODUCTION TO THE STUDY OF CLINICAL MEDICINE. Being a Guide to the Investigation of Disease. In one handsome 12mo. volume, cloth, \$1 25.

RICHARDSON (BENJ. W.), M.D., F.R.S., M.A., LL.D., F.S.A.,
Fellow of the Royal College of Physicians, London.

PREVENTIVE MEDICINE. In one octavo volume of about 500 pages.
(Shortly.)

HARTSHORNE (HENRY), M.D.,
Professor of Hygiene in the University of Pennsylvania

ESSENTIALS OF THE PRINCIPLES AND PRACTICE OF MEDICINE. A handy book for Students and Practitioners. Fifth edition, thoroughly revised and rewritten. With 140 illustrations. In one handsome royal 12mo. volume, of about 600 pages. *(In Press.)*

The very great success which has exhausted four large editions of this work shows that the author has succeeded in supplying a want felt by a large portion of the profession. It has also enabled him in successive revisions to perfect the details of his plan, and to render the work still more worthy of the favor with which it has been received. In the present edition several hundred brief additions have been made, a number of new subjects have been written upon, especially in connection with the Pathology of the Nervous System, the illustrations have been considerably increased, and a large number of new and carefully selected formulae for the administration of medicines have been introduced. An account is given, also, in this edition for the first time, of the method of prescribing according to the metrical system, and a section is added upon Eyesight, its Examination and Correction. In presenting this edition, therefore, the publishers feel that it is in every way worthy a continuance of the favor hitherto accorded this work.

WOODBURY (FRANK), M.D.,

Physician to the German Hospital, Philadelphia, late Chief Assist. to Med. Clinic, Jeff. College Hospital, etc.

A HANDBOOK OF THE PRINCIPLES AND PRACTICE OF
Medicine; for the use of Students and Practitioners. In one neat volume, royal 12mo., with illustrations. *(In Press.)*

FOTHERGILL (J. MILNER), M.D. Edin., M.R.C.P. Lond.,
Asst. Phys. to the West Lond. Hosp.; Asst. Phys. to the City of Lond. Hosp., etc.

THE PRACTITIONER'S HANDBOOK OF TREATMENT; Or, the
Principles of Therapeutics. Second edition, revised and enlarged. In one very neat octavo volume of about 650 pages. Cloth, \$4 00; very handsome half Russia, \$5 50.
(Just Ready.)

The junior members of the profession will find in it a work that should not only be read, but carefully studied. It will assist them in the proper selection and combination of therapeutical agents best adapted to each case and condition, and enable them to prescribe intelligently and successfully. To do full justice to a work of this scope and character will be impossible in a review of this kind. The book itself must be read to be fully appreciated.—*St. Louis Courier of Medicine*, Nov. 1880.

The author merits the thanks of every well-edu-

cated physician for his efforts toward rationalizing the treatment of diseases upon the scientific basis of physiology. Every chapter, every line, has the impress of a master hand, and while the work is thoroughly scientific in every particular, it presents to the thoughtful reader all the charms and beauties of a well-written novel. No physician can well afford to be without this valuable work, for its originality makes it fill a niche in medical literature hitherto vacant.—*Nashville Journ. of Med. and Surg.*, Oct. 1880.

FINLAYSON (JAMES), M.D.,

Physician and Lecturer on Clinical Medicine in the Glasgow Western Infirmary, etc.

CLINICAL DIAGNOSIS; A Handbook for Students and Practitioners of Medicine. In one handsome 12mo. volume, of 546 pages, with 85 illustrations. Cloth, \$2 63. *(Late Issued.)*

The book is an excellent one, clear, concise, convenient, practical. It is replete with the very knowledge the student needs when he quits the lecture-room and the laboratory for the ward and sick-room, and does not lack in information that will meet the wants of experienced and older men.—*Phila. Med. Times*, Jan. 4, 1879.

This is one of the really useful books. It is attrac-

tive from preface to the final page, and ought to be given a place on every office table, because it contains in a condensed form all that is valuable in semeiology and diagnostics to be found in bulkier volumes, and because in its arrangement and complete index, it is unusually convenient for quick reference in any emergency that may come upon the busy practitioner.—*N. C. Med. Journ.*, Jan. 1879.

WATSON (THOMAS), M.D., &c.

LECTURES ON THE PRINCIPLES AND PRACTICE OF
PHYSIO. Delivered at King's College, London. A new American, from the Fifth revised and enlarged English edition. Edited, with additions, and several hundred illustrations, by HENRY HARTSHORNE, M.D., Professor of Hygiene in the University of Pennsylvania. In two large and handsome 8vo. vols. Cloth, \$9 00; leather, \$11 00.

WILLIAMS'S PULMONARY CONSUMPTION; its
Nature, Varieties and Treatment. With an Analysis of One Thousand Cases to exemplify its duration. In one neat octavo volume of about 350 pages; cloth, \$2 50.

SLADE ON DIPHTHERIA; its Nature and Treat-
ment, with an account of the History of its Pre-
valence in various Countries. Second and revised edition. In one neat royal 12mo. volume, cloth, \$1 25.

WALSHE ON THE DISEASES OF THE HEART AND
GREAT VESSELS. Third American Edition. In 1 vol. 8vo., 420 pp., cloth, \$3 00.

SMITH ON CONSUMPTION; ITS EARLY AND RE-
MEDIABLE STAGES. 1 vol. 8vo., pp. 254. \$2 25.

FULLER ON DISEASES OF THE LUNGS AND AIR-
PASSAGES, Their Pathology, Physical Diagnosis,
Symptoms and Treatment. From the Second and revised English edition. In one handsome octavo volume of about 500 pages; cloth, \$3 50.

REYNOLDS (J. RUSSELL), M.D.,*Prof. of the Principles and Practice of Medicine in Univ. College, London.*

A SYSTEM OF MEDICINE WITH NOTES AND ADDITIONS BY HENRY HARTSHORNE, M.D., late Professor of Hygiene in the University of Penna. In three large and handsome octavo volumes, containing 3052 closely printed double-columned pages, with numerous illustrations. *Sold only by subscription.* Price per vol., in cloth, \$5.00; in sheep, \$6.00; half Russia, raised bands, \$6.50. Per set in cloth, \$15; sheep, \$18; half Russia, \$19.50.

VOLUME I. (*just ready*) contains GENERAL DISEASES and DISEASES OF THE NERVOUS SYSTEM.

VOLUME II. (*just ready*) contains DISEASES OF RESPIRATORY and CIRCULATORY SYSTEMS.

VOLUME III. (*just ready*) contains DISEASES OF THE DIGESTIVE and BLOOD GLANDULAR SYSTEMS, OF THE URINARY ORGANS, OF THE FEMALE REPRODUCTIVE SYSTEM, and OF THE CUTANEOUS SYSTEM.

Reynolds's SYSTEM OF MEDICINE, recently completed, has acquired, since the first appearance of the first volume, the well-deserved reputation of being the work in which modern British medicine is presented in its fullest and most practical form. This could scarce be otherwise in view of the fact that it is the result of the collaboration of the leading minds of the profession, each subject being treated by some gentleman who is regarded as its highest authority—as for instance, Diseases of the Bladder by Sir HENRY THOMPSON, Malpositions of the Uterus by GRAILY HEWITT, Insanity by HENRY MAUDSLEY, Consumption by J. HUGHES BENNET, Diseases of the Spine by CHARLES BLAND RADCLIFFE, Pericarditis by FRANCIS SIBSON, Alcoholism by FRANCIS E. ANSTIE, Renal Affections by WILLIAM ROBERTS, Asthma by HYDE SALTER, Cerebral Affections by H. CHARLTON BASTIAN, Gout and Rheumatism by ALFRED BARING GABROD, Constitutional Syphilis by JONATHAN HUTCHINSON, Diseases of the Stomach by WILSON FOX, Diseases of the Skin by BALMUNO SQUIRE, Affections of the Larynx by MORELL MACARENZIE, Diseases of the Rectum by BLIZARD CURLING, Diabetes by LAUDER BRUNTON, Intestinal Diseases by JOHN SYER BRISTOWE, Catalepsy and Somnambulism by THOMAS KING CHAMBERS, Apoplexy by J. HUGHLINGS JACKSON, Angina Pectoris by PROFESSOR GAIMER, Emphysema of the Lungs by Sir WILLIAM JENNER, etc. etc. All the leading schools in Great Britain have contributed their best men in generous rivalry, to build up this monument of medical science. St. Bartholomew's, Guy's, St. Thomas's, University College, St. Mary's, in London, while the Edinburgh, Glasgow, and Manchester schools are equally well represented, the Army Medical School at Netley, the military and naval services, and the public health boards. That a work conceived in such a spirit, and carried out under such auspices should prove an indispensable treasury of facts and experience, suited to the daily wants of the practitioner, was inevitable, and the success which it has enjoyed in England, and the reputation which it has acquired on this side of the Atlantic, have sealed it with the approbation of the two pre-eminently practical nations.

Its large size and high price having kept it beyond the reach of many practitioners in this country who desire to possess it, a demand has arisen for an edition at a price which shall render it accessible to all. To meet this demand the present edition has been undertaken. The five volumes and five thousand pages of the original have, by the use of a smaller type and double columns, been compressed into three volumes of over three thousand pages, clearly and handsomely printed, and offered at a price which renders it one of the cheapest works ever presented to the American profession.

But not only is the American edition more convenient and lower priced than the English; it is also better and more complete. Some years having elapsed since the appearance of a portion of the work, additions are required to bring up the subjects to the existing condition of science. Some diseases, also, which are comparatively unimportant in England, require more elaborate treatment to adapt the articles devoted to them to the wants of the American physician; and there are points on which the received practice in this country differs from that adopted abroad. The supplying of these deficiencies has been undertaken by HENRY HARTSHORNE, M.D., late Professor of Hygiene in the University of Pennsylvania, who has endeavored to render the work fully up to the day, and as useful to the American physician as it has proved to be to his English brethren. The number of illustrations has also been largely increased, and no effort spared to render the typographical execution unexceptionable in every respect.

Really too much praise can scarcely be given to this noble book. It is a cyclopaedia of medicine written by some of the best men of Europe. It is full of useful information such as one finds frequent need of in one's daily work. As a book of reference it is invaluable. It is up with the times. It is clear and concentrated in style, and its form is worthy of its famous publisher. — *Louisville Med. News*, Jan. 31, 1880.

"Reynolds' System of Medicine" is justly considered the most popular work on the principles and practice of medicine in the English language. The contributors to this work are gentlemen of well-known reputation on both sides of the Atlantic. Each gentleman has striven to make his part of the work as practical as possible, and the information contained is such as is needed by the busy practitioner. — *St. Louis Med. and Surg. Journ.*, Jan. '80.

Dr. Hartshorne has made ample additions and revisions, all of which give increased value to the volume, and render it more useful to the American practitioner. There is no volume in English medical literature more valuable, and every purchaser will, on becoming familiar with it, congratulate himself on the possession of this vast storehouse of information, in regard to so many of the

subjects with which he should be familiar. — *Gaillard's Med. Journ.*, Feb. 1880.

There is no medical work which we have in times past more frequently and fully consulted when perplexed by doubts as to treatment, or by having unusual or apparently inexplicable symptoms presented to us than "Reynolds' System of Medicine." Among its contributors are gentlemen who are as well known by reputation upon this side of the Atlantic as in Great Britain, and whose right to speak with authority upon the subjects about which they have written, is recognized the world over. They have evidently striven to make their essays as practical as possible, and while these are sufficiently full to entitle them to the name of monographs, they are not loaded down with such an amount of detail as to render them wearisome to the general reader. In a word, they contain just that kind of information which the busy practitioner frequently finds himself in need of. In order that any deficiencies may be supplied, the publishers have committed the preparation of the book for the press to Dr. Henry Hartshorne, whose judicious not distributed throughout the volume afford abundant evidence of the thoroughness of the revision to which he has subjected it. — *Am. Jour. Med. Sciences*, Jan. 1880.

BARTHOLOW (ROBERTS), A.M., M.D., LL.D.*Prof. of Materia Medica and General Therapeutics in the Jeff. Med. Coll. of Phila., etc.***A PRACTICAL TREATISE ON ELECTRICITY IN ITS APPLICATION TO MEDICINE.** In one very handsome 8vo. volume of about 270 pages, with 98 illustrations. Cloth, \$2 50. (Just ready.)

EXTRACT FROM THE AUTHOR'S PREFACE.

I have attempted in the preparation of this work to avoid these errors; to prepare one so simple in statement that a student without previous acquaintance with the subject, may readily master the essentials; so complete as to embrace the whole subject of medical electricity, and so condensed as to be complete in a moderate compass. I have endeavored to keep constantly in view the needs of the two classes for whom the work is prepared—students and practitioners. I have assumed an entire unacquaintance with the elements of the subject as the point of departure—for I am addressing those who have either failed to acquire this preliminary knowledge, or having acquired it, find that after the lapse of years, it has become misty and confused. In the accounts of electrical phenomena I have adhered to the modes of expression with which the medical electrical text-books have made us familiar.

This book, then, must be regarded as the exposition of electricity as a remedial agent, made by a medical practitioner for the use of medical practitioners. No claim is made on the ground of pure science. It is believed, however, that the work makes an adequate presentation of the subject, regarding electricity as a remedial agent—as one of the means employed for the treatment and cure of disease.

So far as we know, the need of a clear, simple, untechnical, reliable, concise, and modern treatise upon the subject of medical electricity is only supplied by the volume under consideration. It is not too much to say that, if availed of, it will render accessible to a vast number of members of the profession a therapeutic agent of the greatest value, but which has heretofore been practically of no use whatever to them.—*Maryland Med. Journal*, June 1, 1881.

We have not yet come across a book that can compare with this in clearness and simplicity of statement. We have for a long time needed a text-book on medical electricity, condensed and yet complete, and this want has been well supplied by the distinguished author. The illustrations are elegant, and the book as a whole is a valuable addition to the collection of any student or practitioner.—*Buffalo Med. and Surg. Journal*, June, 1881.

As a whole, the book must be looked upon as an exposition of electricity for remedial purposes, written by a medical practitioner for the use of medical

practitioners. From this standpoint the work is worthy of the careful study of all who desire to investigate this subject for purely practical purposes. This work meets a want of very many students and medical practitioners. We greatly err if it be not gladly welcomed by them. The author, from his long experience as a practitioner, is admirably fitted to perform the task of writing a work of this kind for this special class of men.—*Detroit Lancet*, June, 1881.

This book is expressive of careful research and a nice discrimination in the selection of such matter from that at the author's command as is best adapted for the guidance and instruction of the physician whose interest in electricity is proportionate to its practical bearing on diagnosis and treatment. It is thorough, it is accurate, it is readable, and above all is essentially utilizable, if we may use the word, and renders easy of access to the general practitioner the *modus operandi* of employing this very valuable therapeutic agent.—*N. Y. Medical Gaz.*, June 11, 1881.

MITCHELL (S. WEIR), M.D.*Phys. to Orthopaedic Hospital and the Infirmary for Dis. of the Nervous System, Phila., etc. etc.***LECTURES ON DISEASES OF THE NERVOUS SYSTEM, ESPECIALLY IN WOMEN.** In one very handsome 12mo. volume of about 250 pages, with five lithographic plates. Cloth, \$1 75 (Just Ready.)

The life-long devotion of the author to the subjects discussed in this volume has rendered it eminently desirable that the results of his labors should be embodied for the benefit of those who may experience the difficulties connected with the treatment of this class of disease. Many of these lectures are fresh studies of hysterical affections; others treat of the modifications his views have undergone in regard to certain forms of treatment, while, throughout the whole work, he has been careful to keep in view the practical lessons of his cases.

It is a record of a number of very remarkable cases, with acute analyses and discussions, clinical, physiological, and therapeutical. It is a book to which the physician meeting with a new hysterical experience, or in doubt whether his new experience is hysterical, may well turn with a well-grounded hope of finding a parallelism; it will be a new experience, indeed, if no similar one is here recorded.—*Phila. Med. Times*, June 4, 1881.

The name of the author is sufficient guarantee that these topics are ably and appreciatively discussed; suffice it to say that the principles of treatment, both hygienic and therapeutic, are clearly indicated. The articles being in the form of clinical lectures, abound in illustrative cases, and are much easier reading than a systematic treatise on the same topics.—*College and Clinical Record*, May 15, 1881.

It is needless to say that these lectures are extra-

ordinarily rich in acute observation and sound instruction. The reputation of the author is a guarantee of that, and no reader will be disappointed. Nor can too much be said in praise of the admirable style of his medical writings, and each of these lectures reads with the finished grace of a polished essay. Indeed, the book throughout is so fascinating a one that it could not fail to be read entire by every one who begins its pages.—*Phila. Med. and Surg. Reporter*, May 7, 1881.

The book throughout is not only intensely entertaining, but it contains a large amount of rare and valuable information. Dr. Mitchell has recorded not only the results of his most careful observation, but has added to the knowledge of the subjects treated by his original investigation and practical study. The book is one we can commend to all of our readers.—*Maryland Med. Journal*, May 1, 1881.

HAMILTON (ALLAN McLANE), M.D.*Attending Physician at the Hospital for Epileptics and Paralytics, Blackwell's Island, N. Y., and at the Out-Patients' Department of the New York Hospital.***NERVOUS DISEASES; THEIR DESCRIPTION AND TREATMENT.**

Second edition, thoroughly revised and rewritten. In one handsome octavo volume of about 600 pages, with numerous illustrations. (In Press.)

MORRIS (MALCOLM), M.D.,

Joint Lecturer on Dermatology, St. Mary's Hospital Med. School.

SKIN DISEASES, Including their Definitions, Symptoms, Diagnosis, Prognosis, Morbid Anatomy and Treatment. A Manual for Students and Practitioners. In one 12mo. volume of over 300 pages. With illustrations. Cloth, \$1 75. (*Now Ready.*)

To physicians who would like to know something about skin diseases, so that when a patient presents himself for relief they can make a correct diagnosis and prescribe a rational treatment, we unhesitatingly recommend this little book of Dr. Morris. The affections of the skin are described in a terse, lucid manner, and their several characteristics so plainly set forth that diagnosis will be easy. The treatment in each case is such as the experience of the most eminent dermatologists advise.—*Cincinnati Medical News*, April, 1880.

This is emphatically a learner's book; for we can safely say, so far as our judgment goes, that in the whole range of medical literature of a like scope, there is no book which for clearness of expression, and methodical arrangement is better adapted to promote a rational conception of dermatology, a branch confessedly difficult and perplexing to the

beginner.—*St. Louis Courier of Medicine*, April, 1880.

The author of this manual has evidently a full and intimate acquaintance with the literature of dermatology, and with the most recent developments and appliances of cutaneous medicine. He has produced a plain, practical book, by aid of which, who so chooses may train his eye to the recognition of light but significant differences. The descriptions are neither too vague nor over-refined; the directions for treatment are clear and succinct.—*London Brain*, April, 1880.

The author's task has been well done and has produced one of the best recent works upon the difficult subject of which it treats; there is no work published which gives a better view of the elementary facts and principles of dermatology.—*New Orleans Medical and Surgical Journal*, April, 1880.

FOX (TILBURY), M.D., F.R.C.P., and T. C. FOX, B.A., M.R.C.S.,

Physician to the Department for Skin Diseases, University College Hospital.

EPITOME OF SKIN DISEASES. WITH FORMULÆ. FOR STUDENTS AND PRACTITIONERS. Second edition, thoroughly revised and greatly enlarged. In one very handsome 12mo. volume of 216 pages. Cloth, \$1 38.

FLINT (AUSTIN), M.D.,

Professor of the Principles and Practice of Medicine in Bellevue Hospital Med. College, N. Y.

A MANUAL OF PERCUSSION AND AUSCULTATION; of the Physical Diagnosis of Diseases of the Lungs and Heart, and of Thoracic Aneurism. Second edition. In one handsome royal 12mo. volume: cloth, \$1 63. (*Just Ready.*)

The little work before us has already become a standard one, and has become extensively adopted as a text-book. There is certainly none better. It contains the substance of the lessons which the

BY THE SAME AUTHOR.

PHTHISIS: ITS MORBID ANATOMY, ETIOLOGY, SYMPTOMATIC EVENTS AND COMPLICATIONS, FATALITY AND PROGNOSIS, TREATMENT AND PHYSICAL DIAGNOSIS; in a series of Clinical Studies. By **AUSTIN FLINT, M.D.,** Prof. of the Principles and Practice of Medicine in Bellevue Hospital Med. College, New York. In one handsome octavo volume: \$3 50.

BY THE SAME AUTHOR.

A PRACTICAL TREATISE ON THE DIAGNOSIS, PATHOLOGY, AND TREATMENT OF DISEASES OF THE HEART. Second revised and enlarged edition. In one octavo volume of 550 pages, with a plate, cloth, \$4.

BY THE SAME AUTHOR.

A PRACTICAL TREATISE ON THE PHYSICAL EXPLORATION OF THE CHEST AND THE DIAGNOSIS OF DISEASES AFFECTING THE RESPIRATORY ORGANS. Second and revised edition. In one handsome octavo volume of 595 pages, cloth, \$4 50.

BROWN (LENNOX), F.R.C.S. Ed.,

Senior Surgeon to the Central London Throat and Ear Hospital, etc.

THE THROAT AND ITS DISEASES. Second American, from the Second English Edition, thoroughly revised. With one hundred Typical Illustrations in colors, and fifty wood engravings, designed and executed by the author. In one very handsome imperial octavo volume of over 350 pages. (*Preparing.*)

SEILER (CARL), M.D.,

Lecturer on Laryngoscopy at the Univ. of Penna., Chief of the Throat Dispensary at the Univ. Hospital, Phila., etc.

HANDBOOK OF DIAGNOSIS AND TREATMENT OF DISEASES OF THE THROAT AND NASAL CAVITIES. In one handsome royal 12mo. volume, of 156 pages, with 35 illustrations; cloth, \$1. (*Lately Issued.*)

We most heartily commend this book as showing sound judgment in practice, and perfect familiarity with the literature of the specialty it so ably epitomizes.—*Philada. Med. Times*, July 5, 1879.

A convenient little handbook, clear, concise, and accurate in its method, and admirably fulfilling its purpose of bringing the subject of which it treats within the comprehension of the general practitioner.—*N. C. Med. Jour.*, June, 1879.

CLINICAL OBSERVATIONS ON FUNCTIONAL NERVOUS DISORDERS BY C. HANDFIELD JONES, M.D., Physician to St. Mary's Hospital, &c. Second American Edition. In one handsome octavo volume of 348 pages, cloth, \$3 25.

HILLIER'S HANDBOOK OF SKIN DISEASES, for Students and Practitioners. Second Am Ed. In one royal 12mo. vol. of 358 pp. With illustrations. Cloth, \$2 25.

BUMSTEAD (FREEMAN J.), M.D., LL.D.,*Late Professor of Venereal Diseases at the Col. of Phys. and Surg., New York, &c.***THE PATHOLOGY AND TREATMENT OF VENEREAL DISEASES.**

Including the results of recent investigations upon the subject. Fourth Edition, revised and largely rewritten with the co-operation of R. W. Taylor, M.D., of New York, Prof. of Dermatology in the Univ. of Vt. In one large and handsome octavo volume of 835 pages, with 138 illustrations. Cloth, \$4 75; leather, \$5 75; half Russia, \$6 25. (*Now Ready.*)

We have to congratulate our countrymen upon the truly valuable addition which they have made to American literature. The careful estimate of the value of the volume, which we have made, justifies us in declaring that this is the best treatise on venereal diseases in the English language, and we might add, if there is a better in any other tongue we cannot name it; there are certainly no books in which the student or the general practitioner can find such an excellent résumé of the literature of any topic, and such practical suggestions regarding the treatment of the various complications of every venereal disease. We take pleasure in repeating that we believe this to be the best treatise on venereal disease in the English language, and we congratulate the authors upon their brilliant addition to American medical literature.—*Chicago Med. Journal and Examiner*, February, 1880.

It is, without exception, the most valuable single work on all branches of the subject of which it treats in any language. The pathology is sound, the work is, at the same time, in the highest degree practical, and the hints that he will get from it for the management of any one case, at all obscure or obstinate,

will more than repay him for the outlay.—*Archives of Medicine*, April, 1880.

This now classical work on venereal disease comes to us in its fourth edition rewritten, enlarged, and materially improved in every way. Dr. Taylor, as we had every reason to expect, has performed this part of his work with unusual excellence. We feel that what has been written has done but scanty justice to the merits of this truly great treatise.—*St. Louis Courier of Medicine*, Feb. 1880.

We find that we have here practically a new book—that the statement of the title-page, as to the fact that it has been largely rewritten, is a sufficiently modest announcement for the important changes in the text. After a thorough examination of the present edition, we can assert confidently that the enormous labor we have described has been here most faithfully and conscientiously performed.—*Amer. Journ. Med. Sci.*, Jan. 1880.

It is one of the best general treatises on venereal diseases with which we are acquainted, and is especially to be recommended as a guide to the treatment of syphilis.—*London Practitioner*, March, 1880.

GROSS (SAMUEL W.), A.M., M.D.,*Lecturer on Genito-Urinary and Venereal Diseases in the Jefferson Medical College, Phila.***A PRACTICAL TREATISE ON IMPOTENCE, STERILITY AND ALLIED DISORDERS OF THE MALE SEXUAL ORGANS.**

In one very handsome octavo volume of 174 pages, with 16 illustrations. Cloth, \$1 50. (*Just Ready.*)

EXTRACT FROM THE AUTHOR'S PREFACE.

"My aim has been to supply, in a compact form, practical and strictly scientific information, especially adapted to the wants of the general practitioner, in regard to a class of common and grave disorders, upon the correction of which so much of human happiness depends. In the chapter on Sterility, the abnormal conditions of the semen and the causes which deprive it of its fecundating properties are fully considered—a portion of the work intended to supplement the subject of sterility in the female. From answers to letters addressed to many of the most prominent writers in this country on gynecology, I find that, with few exceptions, the woman alone commands attention in unfruitful marriages. The importance of examining the husband before subjecting the wife to operation will be best appreciated when I state that he is, as a rule, at fault in at least one example in every six."

GULLERIER (A.), and*Surgeon to the Hôpital du Midi,***BUMSTEAD (FREEMAN J.),***Professor of Venereal Diseases in the College of Physicians and Surgeons, N. Y.***AN ATLAS OF VENEREAL DISEASES.** Translated and Edited by

FREEMAN J. BUMSTEAD. In one large imperial 4to. volume of 328 pages, double-columns, with 26 plates, containing about 150 figures, beautifully colored, many of them the size of life; strongly bound in cloth, \$17 00; also, in five parts, stout wrappers, at \$3 per part.

Anticipating a very large sale for this work, it is offered at the very low price of THREE DOLLARS a Part, thus placing it within the reach of all who are interested in this department of practice. Gentlemen desiring early impressions of the plates would do well to order it without delay. A specimen of the plates and text sent free by mail, on receipt of 25 cents.

LEE'S LECTURES ON SYPHILIS AND SOME FORMS OF LOCAL DISEASE AFFECTING PRINCIPALLY THE ORGANS OF GENERATION. In one handsome octavo volume; cloth, \$2 25.

CONDIE'S PRACTICAL TREATISE ON THE DISEASES OF CHILDREN. Sixth edition, revised and augmented. In one large octavo volume of nearly 800 closely-printed pages, cloth, \$5 25; leather, \$6 25.

WILSON'S STUDENT'S BOOK OF CUTANEOUS MEDICINE AND DISEASES OF THE SKIN. In one very handsome royal 12mo. volume. \$3 50.

CHAMBERS'S MANUAL OF DIET AND REGIMEN IN HEALTH AND SICKNESS. In one handsome octavo volume. Cloth, \$2 75.

BASHAM ON RENAL DISEASES: a Clinical Guide to their Diagnosis and Treatment. With illustrations. In one 12mo. vol. of 304 pages, cloth, \$2 00.

LECTURES ON THE STUDY OF FEVER. By A. HEPSON, M.D., M.R.I.A., Physician to the Meath Hospital. In one vol. 8vo., cloth, \$2 50.

A TREATISE ON FEVER. By ROBERT D. LYONS, K.C.C. In one octavo volume of 362 pages, cloth, \$2 25.

HILL ON SYPHILIS AND LOCAL CONTAGIOUS DISORDERS. In one handsome octavo volume; cloth, \$3 25.

SMITH'S PRACTICAL TREATISE ON THE WASTING DISEASES OF INFANCY AND CHILDHOOD. Second American, from the Second revised and enlarged English edition. In one handsome octavo volume, cloth, \$2 50.

LA ROCHE ON PNEUMONIA. 1 vol. 8vo., cloth, of 500 pages. Price, \$3 00.

SMITH (J. LEWIS), M.D.,

Clinical Professor of Diseases of Children in the Bellevue Hospital Med. College, N. Y.

A COMPLETE PRACTICAL TREATISE ON THE DISEASES OF CHILDREN. Fifth Edition, thoroughly revised and rewritten. In one handsome octavo volume of 836 pages, with illustrations. Cloth, \$4 50; leather, \$5 50; very handsome half Russia, raised bands, \$6. (*Just Ready.*)

The opportunity afforded the author by the call for a new edition of his treatise on the Diseases of Children has been taken advantage of to render the volume in every respect worthy a continuance of the profession's confidence with which it has been favored in the past. Many portions of the work have been entirely rewritten, several additional diseases treated of, and much new matter introduced; but by the employment of a more condensed style of letter, the size of the work has not been materially enlarged. It will be observed that the very moderate price of the previous edition has not been increased.

KEATING (JOHN M.), M.D.,

Lecturer on the Diseases of Children at the University of Pennsylvania, &c.

THE MOTHER'S GUIDE IN THE MANAGEMENT AND FEEDING OF INFANTS. In one handsome 12mo. vol. of 118 pages. Cloth, \$1 00. (*Now Ready.*)

The title of this little book is well chosen, and Dr. Keating has written a work which should be read, and its precepts followed by every intelligent mother in this country. It is free from all technical terms, the language is clear and distinct, and so carefully written that it cannot fail to become popular. It has always been a mooted question how far it is well to instruct the public, but works like this one will aid the physician immensely, for it saves the time he is constantly giving his patients in in-

structing them on the subjects here dwelt so thoroughly and practically upon. Dr. Keating has written a practical book, has carefully avoided unnecessary repetition, and, I think, successfully instructed the mother in such details of the treatment of her child as devolve upon her; he has studiously omitted giving prescriptions, and instructs the mother when to call upon the doctor, as his duties are totally distinct from hers.—*American Journal of Obstetrics*, October, 1881.

WEST (CHARLES), M.D.,

Physician to the Hospital for Sick Children, London, &c.

LECTURES ON THE DISEASES OF INFANCY AND CHILDHOOD. Fifth American from the Sixth revised and enlarged English edition. In one large and handsome octavo volume of 678 pages. Cloth, \$4 50; leather, \$5 50.

BY THE SAME AUTHOR. (*Lately Issued.*)

ON SOME DISORDERS OF THE NERVOUS SYSTEM IN CHILDHOOD; being the Lumleian Lectures delivered at the Royal College of Physicians of London, in March, 1871. In one volume small 12mo., cloth, \$1 00.

BY THE SAME AUTHOR.

LECTURES ON THE DISEASES OF WOMEN. Third American, from the Third London edition. In one neat octavo volume of about 550 pages, cloth, \$3 75; leather, \$4 75.

SWAYNE (JOSEPH GRIFFITHS), M.D.,

Physician-Accoucheur to the British General Hospital, &c.

OBSTETRIC APHORISMS FOR THE USE OF STUDENTS COMMENCING MIDWIFERY PRACTICE. Second American, from the Fifth and Revised London Edition, with Additions by E. R. HUTCHINS, M.D. With Illustrations. In one neat 12mo. volume. Cloth, \$1 25.

CHURCHILL ON THE PUERPERAL FEVER AND OTHER DISEASES PECULIAR TO WOMEN. 1 vol. 8vo., pp. 450, cloth. \$2 50.

DEWEES'S TREATISE ON THE DISEASES OF FEMALES. With illustrations. Eleventh Edition, with the Author's last improvements and corrections. In one octavo volume of 536 pages, with plates, cloth. \$3 00.

MEIGS ON THE NATURE, SIGNS AND TREATMENT OF CHILD BED FEVER. 1 vol. 8vo., pp. 365, cloth. \$2 00.

ASHWELL'S PRACTICAL TREATISE ON THE DISEASES PECULIAR TO WOMEN. Third American, from the Third and revised London edition. 1 vol. 8vo., pp. 528, cloth. \$3 50.

WINCKEL (F.),

Professor and Director of the Gynecological Clinic in the University of Rostock.

A COMPLETE TREATISE ON THE PATHOLOGY AND TREATMENT OF CHILD BED, for Students and Practitioners. Translated, with the consent of the author, from the Second German Edition, by JAMES READ CHADWICK, M.D. In one octavo volume. Cloth, \$4 00.

MONTGOMERY'S EXPOSITION OF THE SIGNS AND SYMPTOMS OF PREGNANCY. With two exquisite colored plates, and numerous wood-cuts. In 1 vol. 8vo., of nearly 600 pp., cloth, \$3 75.

RIGBY'S SYSTEM OF MIDWIFERY. With notes and Additional Illustrations. Second American edition. One volume octavo, cloth, 422 pages, \$2 50.

THOMAS (T. GAILLARD), M.D.,*Professor of Obstetrics, &c., in the College of Physicians and Surgeons, N. Y., &c***A PRACTICAL TREATISE ON THE DISEASES OF WOMEN. Fifth**

Edition, thoroughly revised and rewritten. In one large and handsome octavo volume of over 800 pages, with 266 illustrations. Cloth, \$5; leather, \$6; very handsome half Russia, raised bands, \$6 50. (Just Ready.)

The author has taken advantage of the opportunity afforded by the call for a new edition of this work to render it worthy a continuance of the very remarkable favor with which it has been received. Every portion of the work has been carefully revised, very much of it has been rewritten, and additions and alterations introduced wherever the advance of science and the increased experience of the author have shown them desirable. At the same time special care has been exercised to avoid undue increase in the size of the volume. To accommodate the numerous additions a more condensed but very clear letter has been used, notwithstanding which, the number of pages has been increased by more than fifty. The series of illustrations has been extensively changed; many which seemed to be superfluous have been omitted, and a large number of new and superior drawings have been inserted. In its improved form, therefore, it is hoped that the volume will maintain the character it has acquired of a standard authority on every detail of its important subject.

An examination of the work will satisfy that it is one of great merit. It is not a mere compilation from other works, but is the fruit of the ripe thought, sound judgment, and critical observations of a learned, scientific man. It is a treasury of knowledge of the department of medicine to which it is devoted. In its present revised state it certainly holds a foremost position as a gynecological work, and will continue to be regarded as a standard authority.—*Cincinnati Med. News*, Dec. 1880.

This work needs no introduction to any of the civilized nations of the world. The edition before us adds to the strength of former volumes. With the wisdom of a master teacher he here gives the results that, in his judgment, are most trustworthy at the present time. In its own place it has no rival, because the author is the best teacher on this subject to the masses of the profession. As hitherto this work will be the text-book on diseases of women. We only wish that in other branches of medicine as capable teachers could be found to write our text-books.—*Detroit Lancet*, Jan. 1881.

Since its first appearance, twelve years ago, until the present day, it has held a position of high regard, and is generally conceded to be one of the most practical and trustworthy volumes yet presented to the physician and student in the department of gynecology. The work embodies not only

its author's large experience, but reflects his careful study among other authorities in this branch, both at home and abroad. Dr. Thomas is an able and conscientious teacher. His writings convey his meaning in the same practical and instructive manner. The last edition of this work is fresh from his pen, with decided changes and improvements over former editions. His book presents generally accepted facts, and as a guide to the student is more useful and reliable than any work in the language on diseases of women. This last edition will add new laurels to those already won.—*Md. Med. Journ.*, Nov. 15, 1880.

It has been enlarged and carefully revised. The author has brought it fully abreast with the times, and as the wave of gynecological progression has been widespread and rapid during the twelve years that have elapsed since the issue of the first edition, one can conceive of the great improvement this edition must be upon the earlier. It is a condensed encyclopedia of gynecological medicine. The style of arrangement, the masterly manner in which each subject is treated, and the honest convictions derived from probably the largest clinical experience in that specialty of any in this country, all serve to commend it in the highest terms to the practitioner.—*Nashville Journ. of Med. and Surg.*, Jan. 1881.

EDIS (ARTHUR W.), M.D. Lond., F.R.C.P., M.R.C.S.*Assist. Obstetric Physician to Middlesex Hospital, late Physician to British Lying-in Hospital.***THE DISEASES OF WOMEN. Including their Pathology, Causation, Symptoms, Diagnosis, and Treatment. A manual for Students and Practitioners. In one handsome octavo volume with 149 illustrations. (Shortly.)****BARNES (ROBERT), M.D., F.R.C.P.,***Obstetric Physician to St. Thomas's Hospital, &c.***A CLINICAL EXPOSITION OF THE MEDICAL AND SURGICAL DISEASES OF WOMEN. Second American, from the Second Enlarged and Revised English Edition. In one handsome octavo volume, of 784 pages, with 181 illustrations. Cloth, \$4 50; leather, \$5 50; half Russia, \$6. (Lately Issued.)**

Dr. Barnes stands at the head of his profession in the old country, and it requires but scant scrutiny of his book to show that it has been sketched by a master. It is plain, practical common sense; shows very deep research without being pedantic; is eminently calculated to inspire enthusiasm without inculcating rashness; points out the dangers to be avoided as well as the success to be achieved in the various operations connected with this branch of medicine; and will do much to smooth the rugged path of the young gynecologist and relieve the per-

plexity of the man of mature years.—*Canadian Journ. of Med. Science*, Nov. 1878.

Dr. Barnes's work is one of a practical character, largely illustrated from cases in his own experience, but by no means confined to such, as will be learned from the fact that he quotes from no less than 628 medical authors in numerous countries. Coming from such an author, it is not necessary to say that the work is a valuable one, and should be largely consulted by the profession.—*Am. Supp. Obstetrical Journ. Gt. Britain and Ireland*, Oct. 1878.

HODGE (HUGH L.), M.D.,*Emeritus Professor of Obstetrics, &c., in the University of Pennsylvania.***ON DISEASES PECULIAR TO WOMEN; including Displacements of the Uterus. With original illustrations. Second edition, revised and enlarged. In one beautifully printed octavo volume of 531 pages, cloth, \$4 50.**

EMMET (THOMAS ADDIS), M.D.,
Surgeon to the Woman's Hospital, New York, etc.

THE PRINCIPLES AND PRACTICE OF GYNÆCOLOGY, for the use of Students and Practitioners of Medicine. Second Edition. Thoroughly Revised. In one large and very handsome octavo volume of 875 pages, with 133 illustrations. Cloth, \$5; leather, \$6; half Russia, raised bands, \$6 50. (*Just Ready.*)

PREFACE TO THE SECOND EDITION.

The unusually rapid exhaustion of a large edition of this work, while flattering to the author as an evidence that his labors have proved acceptable, has in a great measure heightened his sense of responsibility. He has therefore endeavored to take full advantage of the opportunity afforded to him for its revision. Every page has received his earnest scrutiny; the criticisms of his reviewers have been carefully weighed; and while no marked increase has been made in the size of the volume, several portions have been rewritten, and much new matter has been added. In this minute and thorough revision, the labor involved has been much greater than is perhaps apparent in the results, but it has been cheerfully expended in the hope of rendering the work more worthy of the favor which has been accorded to it by the profession.

In no country of the world has gynecology received more attention than in America. It is, then, with a feeling of pleasure that we welcome a work on diseases of women from so eminent a gynecologist as Dr. Emmet, and the work is essentially clinical, and leaves a strong impress of the author's individuality. To criticize, with the care it merits, the book throughout, would demand far more space than is at our command. In parting, we can say that the work teems with original ideas, fresh and valuable methods of practice, and is written in a clear and elegant style, worthy of the literary reputation of the country of Longfellow and Oliver Wendell Holmes.—*Brit. Med. Journ.*, Feb. 21, 1880.

No gynecological treatise has appeared which contains an equal amount of original and useful matter; nor does the medical and surgical history of America include a book more novel and useful. The tabular and statistical information which it contains is marvellous, both in quantity and accuracy, and cannot be otherwise than invaluable to future investigators. It is a work which demands

not careless reading but profound study. Its value as a contribution to gynecology is, perhaps, greater than that of all previous literature on the subject combined.—*Chicago Med. Gaz.*, April 5, 1880.

The wide reputation of the author makes its publication an event in the gynecological world; and a glance through its pages shows that it is a work to be studied with care. . . . It must always be a work to be carefully studied and frequently consulted by those who practise this branch of our profession.—*London Med. Times and Gaz.*, Jan. 10, 1880.

The character of the work is too well known to require extended notice—suffice it to say that no recent work upon any subject has attained such great popularity so rapidly. As a work of general reference upon the subject of Diseases of Women it is invaluable. As a record of the largest clinical experience and observation it has no equal. No physician who pretends to keep up with the advances of this department of medicine can afford to be without it.—*Nashville Journ. of Medicine and Surgery*, May, 1880.

DUNCAN (J. MATTHEWS), M.D., LL.D., F.R.S.E., etc.

CLINICAL LECTURES ON THE DISEASES OF WOMEN, Delivered in Saint Bartholomew's Hospital. In one very neat octavo volume of 173 pages. Cloth, \$1 50. (*Just Ready.*)

They are in every way worthy of their author; indeed, we look upon them as among the most valuable of his contributions. They are all upon matters of great interest to the general practitioner. Some of them deal with subjects that are not, as a rule, adequately handled in the text-books; others of them, while bearing upon topics that are usually treated of at length in such works, yet bear such a stamp of individuality that, if widely read, as they certainly deserve to be, they cannot fail to exert a wholesome restraint upon the undue eagerness with which many young physicians seem bent upon following the wild teachings which so infect the gynecology of the present day.—*N. Y. Med. Journ.*, March, 1880.

The author is a remarkably clear lecturer, and his discussion of symptoms and treatment is full and suggestive. It will be a work which will not fail to be read with benefit by practitioners as well as by students.—*Phila. Med. and Surg. Reporter*, Feb. 7, 1880.

We have read this book with a great deal of pleasure. It is full of good things. The hints on pathology and treatment scattered through the book are sound, trustworthy, and of great value. A healthy scepticism, a large experience, and a clear judgment are everywhere manifest. Instead of bristling with advice or doubtful value and unsound character, the book is in every respect a safe guide.—*The London Lancet*, Jan. 21, 1880.

RAMSBOTHAM (FRANCIS H.), M.D.

THE PRINCIPLES AND PRACTICE OF OBSTETRIC MEDICINE AND SURGERY, in reference to the Process of Parturition. A new and enlarged edition, thoroughly revised by the author. With additions by W. V. KEATINGE, M.D., Professor of Obstetrics, &c., in the Jefferson Medical College, Philadelphia. In one large and handsome imperial octavo volume of 650 pages, strongly bound in leather, with raised bands; with sixty-four beautiful plates, and numerous wood-cuts in the text, containing in all nearly 200 large and beautiful figures. \$7 00

PARRY (JOHN S.), M.D.

Obstetrician to the Philadelphia Hospital, Vice-President of the Obstet. Society of Philadelphia.

EXTRA-UTERINE PREGNANCY; ITS CLINICAL HISTORY, DIAGNOSIS, PROGNOSIS AND TREATMENT. In one handsome octavo volume. Cloth, \$2 50.

TANNER (THOMAS H.), M.D.

ON THE SIGNS AND DISEASES OF PREGNANCY. First American from the Second and Enlarged English Edition. With four colored plates and illustrations on wood. In one handsome octavo volume of about 500 pages, cloth, \$4 25.

LEISHMAN (WILLIAM), M.D.,*Regius Professor of Midwifery in the University of Glasgow, &c.*

A SYSTEM OF MIDWIFERY, INCLUDING THE DISEASES OF PREGNANCY AND THE PUERPERAL STATE. Third American edition, revised by the Author, with additions by JOHN S. PARRY, M.D., Obstetrician to the Philadelphia Hospital, &c. In one large and very handsome octavo volume, of 733 pages, with over two hundred illustrations. Cloth, \$4 50; leather, \$5 50; half Russia, \$6. (*Just Ready*)

Few works on this subject have met with as great a demand as this one appears to have. To judge by the frequency with which its author's views are quoted, and its statements referred to in obstetrical literature, one would judge that there are few physicians devoting much attention to obstetrics who are without it. The author is evidently a man of ripe experience and conservative views, and in no branch of medicine are these more valuable than in this.—*New Remedies*, Jan. 1880.

We gladly welcome the new edition of this excellent text-book of midwifery. The former editions have been most favorably received by the profession on both sides of the Atlantic. In the preparation of the present edition the author has made such alterations as the progress of obstetrical science

seems to require, and we cannot but admire the ability with which the task has been performed. We consider it an admirable text-book for students during their attendance upon lectures, and have great pleasure in recommending it. As an exponent of the midwifery of the present day it has no superior in the English language.—*Canada Lancet*, Jan. 1880.

To the American student the work before us must prove admirably adapted, complete in all its parts, essentially modern in its teachings and with demonstrations noted for clearness and precision, it will gain in favor and be recognized as a work of standard merit. The work cannot fail to be popular, and is cordially recommended.—*N. O. Med. and Surg. Journ.*, March, 1880.

PLAYFAIR (W. S.), M.D., F.R.C.P.,*Professor of Obstetric Medicine in King's College, etc. etc.*

A TREATISE ON THE SCIENCE AND PRACTICE OF MIDWIFERY.

Third American edition, revised by the author. Edited, with additions, by ROBERT P. HARRIS, M.D. In one handsome octavo volume of about 700 pages, with nearly 200 illustrations. Cloth, \$4; leather, \$5; half Russia, \$5 50. (*Just Ready*.)

The medical profession has now the opportunity of adding to their stock of standard medical works one of the best volumes on midwifery ever published. The subject is taken up with a master hand. The part devoted to labor in all its various presentations, the management and results, is admirably arranged, and the views entertained will be found essentially modern, and the opinions expressed trustworthy. The work abounds with plates, illustrating various obstetrical positions; they are admirably wrought, and afford great assistance to the student.—*N. O. Med. and Surg. Journ.*, March, 1880.

If inquired of by a medical student what work on obstetrics we should recommend for him, as *par excellence*, we would undoubtedly advise him to choose Playfair's. It is of convenient size, but what is of chief importance, its treatment of the various subjects is concise and plain. While the discussions and descriptions are sufficiently elaborate to render

a very intelligent idea of them, yet all details not necessary for a full understanding of the subject are omitted.—*Cincinnati Med. News*, Jan. 1880.

The rapidity with which one edition of this work follows another is proof alike of its excellence and of the estimate that the profession has formed of it. It is indeed so well known and so highly valued that nothing need be said of it as a whole. All things considered, we regard this treatise as the very best on Midwifery in the English language.—*N. J. Medical Journal*, May, 1880.

It certainly is an admirable exposition of the Science and Practice of Midwifery. Of course the additions made by the American editor, Dr. R. P. Harris, who never utters an idle word, and whose studious researches in some special departments of obstetrics are so well known to the profession, are of great value.—*The American Practitioner*, April, 1880.

BARNES (FANCOURT), M.D.,*Physician to the General Lying-in Hospital, London.*

A MANUAL OF MIDWIFERY FOR MIDWIVES AND MEDICAL STUDENTS. With 50 illustrations. In one neat royal 12mo. volume of 200 pages; cloth, \$1 25. (*Now Ready*.)

PARVIN (THEOPHILUS), M.D.,*Prof. of Obstetrics and of the Med. and Surg. Diseases of Women in the Med. Coll. of Indiana.*

A TREATISE ON MIDWIFERY. In one very handsome octavo volume of about 550 pages, with numerous illustrations. (*Preparing*.)

HODGE (HUGH L.), M.D.,*Emeritus Professor of Midwifery, &c., in the University of Pennsylvania, &c.*

THE PRINCIPLES AND PRACTICE OF OBSTETRICS. Illustrated with large lithographic plates containing one hundred and fifty-nine figures from original photographs, and with numerous wood-cuts. In one large and beautifully printed quarto volume of 550 double-columned pages, strongly bound in cloth, \$14.

The work of Dr. Hodge is something more than a simple presentation of his particular views in the department of Obstetrics; it is something more than an ordinary treatise on midwifery; it is, in fact, a cyclopædia of midwifery. He has aimed to em-

body in a single volume the whole science and art of Obstetrics. An elaborate text is combined with accurate and varied pictorial illustrations, so that no fact or principle is left unstated or unexplained.—*Am. Med. Times*, Sept. 3, 1864.

*** Specimens of the plates and letter-press will be forwarded to any address, free by mail, on receipt of six cents in postage stamps.

CHADWICK (JAMES R.), A.M., M.D.

A MANUAL OF THE DISEASES PECULIAR TO WOMEN. In one neat volume, royal 12mo., with illustrations. (*Preparing*.)

HAMILTON (FRANK H.) M.D., LL.D.,
Surgeon to the Bellevue Hospital, New York.

A PRACTICAL TREATISE ON FRACTURES AND DISLOCATIONS. Sixth Edition, thoroughly revised, and much improved. In one very handsome octavo volume of over 900 pages, with 352 illustrations. Cloth, \$5 50; leather, \$6 50; half Russia, raised bands, \$7 00. (Just Ready.)

So many kind expressions of welcome have been showered upon each successive edition of this valuable treatise, that scarcely anything remains for us to do but to extend the customary cordial greeting. It is the only complete work on the subject of Fractures in the English language. We congratulate the accomplished author on the deserved success of his work, and hope that he may live to have many succeeding editions pass under his skilled supervision.—*Phila. Coll. and Clin. Record*, Nov. 15, 1880.

Universal verdict has pronounced it, humanly speaking, a perfect treatise upon this subject. As it is the only complete and illustrated work in any language treating of fractures and dislocations, it is safe to affirm that every wide-awake surgeon and general practitioner will regard it as indispensable to the safe and pleasant conduct of their professional work.—*Detroit Lancet*, Nov. 18, 1880.

Dr. Hamilton has devoted great labor to the study of these subjects. His large experience, extended research, and patient investigation have made him one of the highest authorities among living writers in this branch of surgery. This work is systematic and practical in its arrangement, and presents its subject matter clearly and forcibly to the reader or student.—*Maryland Medical Journal*, Nov. 15, 1880.

The only complete work on its subject in the English tongue, and, indeed, may now be said to be the only work of its kind in any tongue. It would require an exceedingly critical examination to detect in it any particulars in which it might be improved. The work is a monument to American surgery, and will long serve to keep green the memory of its venerable author.—*Michigan Med. News*, Nov. 10, 1881.

ASHHURST (JOHN, Jr.), M.D.,

Prof. of Clinical Surgery, Univ. of Pa., Surgeon to the Episcopal Hospital, Philadelphia.

THE PRINCIPLES AND PRACTICE OF SURGERY. Second Edition, enlarged and revised. In one very large and handsome octavo volume of over 1000 pages, with 542 illustrations. Cloth, \$6; leather, \$7; half Russia, \$7 50. (Just Issued.)

Conscientiousness and thoroughness are two very marked traits of character in the author of this book. Out of these traits largely has grown the success of his mental fruit in the past, and the present offer seems in no wise an exception to what has gone before. The general arrangement of the volume is the same as in the first edition, but every part has been carefully revised, and much new matter added.—*Phila. Med. Times*, Feb. 1, 1879.

The favorable reception of the first edition is a guarantee of the popularity of this edition, which is fresh from the editor's hands with many enlargements and improvements. The author of this work is deservedly popular as an editor and writer, and his contributions to the literature of surgery have gained for him wide reputation. The volume now offered the profession will add new laurels to those already won by previous contributions. We can only add that the work is well arranged, filled with practical matter, and contains in brief and clear

language all that is necessary to be learned by the student of surgery whilst in attendance upon lectures, or the general practitioner in his daily routine practice.—*Md. Med. Journal*, Jan. 1879.

The fact that this work has reached a second edition so very soon after the publication of the first one, speaks more highly of its merits than anything we might say in the way of commendation. It seems to have immediately gained the favor of students and physicians.—*Cincin. Med. News*, Jan. '79.

We have previously spoken of Dr. Ashhurst's work in terms of praise. We wish to reiterate those terms here, and to add that no more satisfactory representation of modern surgery has yet fallen from the press. In point of judicial fairness, of power of condensation, of accuracy and conscientiousness of expression and thoroughly good English, Prof. Ashhurst has no superior among the surgical writers in America.—*Am. Practitioner*, Jan. 1879.

STIMSON (LEWIS A.), A.M., M.D.,
Surgeon to the Presbyterian Hospital.

A MANUAL OF OPERATIVE SURGERY. In one very handsome royal 12mo. volume of about 500 pages, with 332 illustrations; cloth, \$2 50.

The work before us is a well printed, profusely illustrated manual of over four hundred and seventy pages. The novice, by a perusal of the work, will gain a good idea of the general domain of operative surgery, while the practical surgeon has presented to him within a very concise and intelligible form the latest and most approved selections of operative procedure. The precision and conscientiousness with which the different operations are described enable the author to compress an immense amount of practical information in a very small compass.—*N. Y. Medical Record*, Aug. 3, 1878.

This volume is devoted entirely to operative surgery, and is intended to familiarize the student with the details of operations and the different modes of

performing them. The work is handsomely illustrated, and the descriptions are clear and well drawn. It is a clever and useful volume; every student should possess one. The preparation of this work does away with the necessity of pondering over larger works on surgery for descriptions of operations, as it presents in a nut-shell just what is wanted by the surgeon without an elaborate search to find it.—*Md. Med. Journal*, Aug. 1878.

The author's conscientiousness and the repleteness of the work with valuable illustrations entitle it to be classed with the text-books for students of operative surgery, and as one of reference to the practitioner.—*Cincinnati Lancet and Clinic*, July 27, 1878.

SKEE'S OPERATIVE SURGERY. In 1 vol. 8vo. cl., of 650 pages; with about 100 wood-cuts. \$3 25.

COOPER'S LECTURES ON THE PRINCIPLES AND PRACTICE OF SURGERY. In 1 vol. 8vo. cl'h, 750 p. \$2.

GIBSON'S INSTITUTES AND PRACTICE OF SURGERY. Eighth edit'n, improved and altered. With thirty-four plates. In two handsome octavo volumes, about 1000 pp., leather, raised bands. \$6 50.

THE PRINCIPLES AND PRACTICE OF SURGERY. By WILLIAM PIRRIE, F.R.S.E., Professor of Surgery in the University of Aberdeen. Edited by JOHN

NEILL, M.D., Professor of Surgery in the Penna. Medical College, Surg'n to the Pennsylvania Hospital, &c. In one very handsome octavo vol. of 780 pages, with 316 illustrations, cloth, \$3 75.

MILLER'S PRINCIPLES OF SURGERY. Fourth American, from the Third Edinburgh Edition. In one large 8vo. vol. of 700 pages, with 340 illustrations, cloth, \$3 75.

MILLER'S PRACTICE OF SURGERY. Fourth American, from the last Edinburgh Edition. Revised by the American editor. In one large 8vo. vol. of nearly 700 pages, with 364 illustrations; cloth, \$3 75.

GROSS (SAMUEL D.), M.D.,

Professor of Surgery in the Jefferson Medical College of Philadelphia.

A SYSTEM OF SURGERY: Pathological, Diagnostic, Therapeutic and Operative. Illustrated by upwards of Fourteen Hundred Engravings. Fifth edition, carefully revised and improved. In two large and beautifully printed imperial octavo volumes of about 2300 pp., strongly bound in leather, with raised bands, \$15; half Russia, raised bands, \$16.

We have seldom read a work with the practical value of which we have been more impressed. Every chapter is so concisely put together, that the busy practitioner, when in difficulty, can at once find the information he requires. His work is cosmopolitan, the surgery of the world being fully represented in it. The work, in fact, is so historically unprejudiced, and so eminently practical, that it is almost a false compliment to say that we believe it to be destined to occupy a foremost place as a work of reference, while a system of surgery like the present system of surgery is the practice of surgeons. The printing and binding of the work is unexceptionable; indeed, it contrasts, in the latter respect, remarkably with English medical and surgical cloth-bound publications, which are generally so wretchedly stitched as to require re-binding before they are any time in use.—*Dub. Journ. of Med. Sci.*, March, 1874.

Dr. Gross's Surgery, a great work, has become still greater, both in size and merit, in its most recent form. The difference in actual number of pages is not more than 130, but the size of the page having been increased to what we believe is technically termed "elephant," there has been room for considerable additions, which, together with the alterations, are improvements.—*London, Lancet*, Nov. 16, 1872.

It combines, as perfectly as possible, the qualities of a text-book and work of reference. We think this last edition of Gross's "Surgery," will confirm his title of

"*Primus inter Pares*." It is learned, scholar-like, methodical, precise, and exhaustive. We scarcely think any living man could write so complete and faultless a treatise, or comprehend more solid, instructive matter in the given number of pages. The labor must have been immense, and the work gives evidence of great powers of mind, and the highest order of intellectual discipline and methodical disposition and arrangement of acquired knowledge and personal experience.—*N.Y. Med. Journ.*, Feb. 1873.

As a whole, we regard the work as the representative "System of Surgery" in the English language.—*St. Louis Medical and Surg. Journ.*, Oct. 1872.

The two magnificent volumes before us afford a very complete view of the surgical knowledge of the day. Some years ago we had the pleasure of presenting the first edition of Gross's Surgery to the profession as a work of unrivalled excellence; and now we have the result of years of experience, labor, and study, all condensed upon the great work before us. And to students or practitioners desirous of enriching their library with a treasure of reference, we can simply commend the purchase of these two volumes of immense research.—*Cincinnati Lancet and Observer*, Sept. 1872.

A complete system of surgery—not a mere text-book of operations, but a scientific account of surgical theory and practice in all its departments.—*Brit. and For. Med. Chir. Rev.*, Jan. 1873.

BY THE SAME AUTHOR.

A PRACTICAL TREATISE ON THE DISEASES, INJURIES and Malformations of the Urinary Bladder, the Prostate Gland and the Urethra. Third Edition, thoroughly Revised and Condensed, by SAMUEL W. GROSS, M.D., Surgeon to the Philadelphia Hospital. In one handsome octavo volume of 574 pages, with 170 illustrations: cloth, \$4 50.

For reference and general information, the physician or surgeon can find no work that meets their necessities more thoroughly than this, a revised edition of an excellent treatise, and no medical library should be without it. Replete with handsome illustrations and good ideas, it has the unusual advantage of being easily comprehended, by the reasonable and practical manner in which the various subjects are systematized and arranged. We heartily recommend it to the profession as a valuable addition to the important literature of dis-

eases of the urinary organs.—*Atlanta Med. Journ.*, Oct. 1876.

It is with pleasure we now again take up this old work in a decidedly new dress. Indeed, it must be regarded as a new book in very many of its parts. The chapters on "Diseases of the Bladder," "Prostate Body," and "Lithotomy," are splendid specimens of descriptive writing; while the chapter on "Stricture" is one of the most concise and clear that we have ever read.—*New York Med. Journ.*, Nov. 1876.

BY THE SAME AUTHOR.

A PRACTICAL TREATISE ON FOREIGN BODIES IN THE AIR-PASSAGES. In 1 vol. 8vo., with illustrations, pp. 468, cloth, \$2 75.

COLEMAN (ALFRED), L.R.C.P., F.R.C.S., L.D.S., etc.

Senior Dental Surgeon and Lecturer on Dental Surgery to St. Bartholomew's Hospital and the Dental College of London.

A MANUAL OF DENTAL SURGERY AND PATHOLOGY.

Thoroughly revised and adapted to the use of American students, by Thomas C. Stellwagen, M.A., M.D., D.D.S., Professor of Physiology at the Philadelphia Dental College. In one handsome volume with about 450 illustrations. (*In Press.*)

DRUITT (ROBERT), M.R.C.S., &c.

THE PRINCIPLES AND PRACTICE OF MODERN SURGERY.

A new and revised American, from the Eighth enlarged and improved London edition. Illustrated with four hundred and thirty-two wood engravings. In one very handsome octavo volume, of nearly 700 large and closely printed pages, cloth, \$4 00; leather, \$5 00.

In Mr. Drutt's book, though containing only some seven hundred pages, both the principles and the practice of surgery are treated, and so clearly and perspicuously, as to elucidate every important topic. We have examined the book most thoroughly, and

can say that this success is well merited. His book, moreover, possesses the inestimable advantages of having the subjects perfectly well arranged and classified and of being written in a style at once clear and succinct.—*Am. Journal of Med. Sciences*.

ASHTON ON THE DISEASES, INJURIES, AND MALFORMATIONS OF THE RECTUM AND ANUS: with remarks on Habitual Constipation. Second American, from the Fourth and enlarged London Edition. With illustrations. In one 8vo. vol. of 257 pages, cloth, \$3 25.

SARGENT ON BANDAGING AND OTHER OPERATIONS OF MINOR SURGERY. New edition, with an additional chapter on Military Surgery. One 12mo. vol. of 383 pages with 184 wood-cuts. Cloth, \$1 75.

HOLMES (TIMOTHY), M. A.,*Surgeon and Lecturer on Surgery at St. George's Hospital, London.***A SYSTEM OF SURGERY; THEORETICAL AND PRACTICAL.**

IN TREATISES BY VARIOUS AUTHORS. AMERICAN EDITION, THOROUGHLY REVISED AND REWRITTEN BY JOHN H. PACKARD, M.D., Surgeon to the Episcopal and St. Joseph's Hospitals, Philadelphia, assisted by a large corps of the most eminent American surgeons. In three large and very handsome imperial octavo volumes of about 1000 pages each, with over 1000 illustrations on wood and thirteen lithographic plates, beautifully colored. (Sold only by subscription.) Price per volume, in cloth, \$6 00; in leather, \$7 00; in half Russia, \$7 50. Per set, in cloth, \$18 00; in leather, \$21 00; in half Russia, \$22 50.

VOLUME I. (*now ready*) contains GENERAL PATHOLOGY, MORBID PROCESSES, INJURIES IN GENERAL, COMPLICATIONS OF INJURIES AND INJURIES OF REGIONS.

VOLUME II. (*nearly ready*) contains DISEASES OF ORGANS OF SPECIAL SENSE, CIRCULATORY SYSTEM, DIGESTIVE TRACT AND GENITO-URINARY ORGANS.

VOLUME III. (*shortly*) contains DISEASES OF THE RESPIRATORY ORGANS, JOINTS, BONES, AND MUSCLES, OPERATIVE AND MINOR SURGERY, GUNSHOT WOUNDS, HOSPITALS AND MISCELLANEOUS SUBJECTS.

This great work, issued some years since in England, has won such universal confidence wherever the language is spoken, that its republication here, in a form more thoroughly adapted to the wants of the American practitioner, has seemed to be a duty owing to the profession.

To accomplish this, the aid has been invited of thirty-three of the most distinguished gentlemen, in every part of the country, and for more than a year they have been assiduously engaged upon the task. Though the original work presents the combined labor of the most eminent members of all the most prominent schools of England, yet the lapse of time since the appearance of the last edition, the progress of science, and the peculiarities of American practice, have rendered necessary a most careful, thorough, and searching revision. Each article has been placed in the hands of a gentleman specially competent to treat its subject, and no labor has been spared to bring each one up to the foremost level of the times, and to adapt it thoroughly to the practice of the country. In certain cases, this has rendered necessary the substitution of an entirely new essay for the original, as in the case of the articles on Skin Diseases, and on Diseases of the Absorbent System, where the views of the authors have been superseded by the advance of medical science, and new articles have therefore been prepared by Drs. ARTHUR VAN HARLINGEN and S. C. BUSEY, respectively. So also in the case of Anæsthetics, in the use of which American practice differs from that of England, the original has been supplemented with a new essay by J. C. REEVE, M.D., treating not only of the employment of ether and chloroform, but of the other anæsthetic agents of more recent discovery. The same careful and conscientious revision has been pursued throughout, leading to an increase of nearly one-fourth in matter, while the series of illustrations has been more than doubled, and the whole is presented as a complete exponent of British and American Surgery, adapted to the daily needs of the working practitioner.

In order to bring it within the reach of every member of the profession, the five volumes of the original have been compressed into three, by employing a double-columned imperial octavo page, and in this improved form it is offered at less than one-half the price of the original. It is beautifully printed on handsome laid paper and forms a worthy companion to RAYNOLDS'S "SYSTEM OF MEDICINE," which has met with so much favor in every section of the country.

The work will be sold by subscription only, and in due time every member of the profession will be called upon and offered an opportunity to subscribe.

The few notices appended will serve to indicate the hearty approval accorded to the unrevised edition on its appearance some years since:—

There is so much that is instructive, even to the experienced practitioner, in their practical and discriminating manner of dealing with mooted questions, none of which seem to be neglected; their abundant illustrations, drawn at once from an unlimited field of hospital experience, and their candid and sensible mode of handling the whole subject, that these particular portions of the work possess a value which places them far above any publication on the same topics yet issued in the language.—*Am. Journ. Med. Sciences.*

The enumeration of the treatises, and the names of the surgical writers from whose pens they proceed, suffice to show that this is no ordinary book, and that in the thousand pages of this goodly volume lies a store of information such as no other surgical work in the language can pretend to offer. Those who are acquainted with the special researches and publications of the respective authors will not fail to notice that by a judicious exercise of editorial discretion, each subject has been entrusted, as far as possible, to a surgeon of the hospitals who is known to have given especial attention to it, and to possess facilities for summing up with authority the accepted opinions of the day, and adding original matter to the stock.—*London Lancet.*

The work must be considered a very complete account of everything connected with the science and practice of surgery. In conclusion we can cordially recommend this work as a valuable addition to the

library of the surgeon.—*Edinburgh Medical Journal.*

It is a cyclopædia of surgery of the most complete and extensive character; and we may justly state that its design and execution do great honor to those concerned, and that the large number and high standing of the authors selected for the various monographs render this "System" what it no doubt was intended to be, representative of the actual state of surgical science and art in the country.—*London Lancet.*

In conclusion, we will add that we can most conscientiously recommend the book to every medical practitioner. In recommending the "System of Surgery" to our friends who have to deal in surgical cases, we by no means wish to confine our recommendation to them alone. Every practitioner of medicine may call something worthy of note from a perusal of this volume.—*The British Med. Journal.*

The four volumes remain a monument to the surgical genius of our day. The great majority of metropolitan surgeons of eminence and proved ability are represented in them; and for many years to come, whoever wishes to know the most authoritative words of English Surgical science on most subjects in the domain of surgery, must turn to these pages to read what there is set forth. But taken as a whole it is the most important surgical work which has ever issued from the English press.—*London Lancet.*

BRYANT (THOMAS), F.R.C.S.,*Surgeon to Guy's Hospital.*

THE PRACTICE OF SURGERY. Third American, from the Second and Revised English Edition. Thoroughly revised and much improved, by John B. Roberts, M.D. In one large and very handsome imperial octavo volume of over 1000 pages, with 672 illustrations. Cloth, \$6 50; leather, \$7 50; very handsome half Russia, raised bands, \$8 00. (*Just Ready.*)

Mr. Bryant's work has long been a favorite one with surgeons. As its name indicates, it is of a thoroughly practical character. It is distinctly individual in that it gives the results of the author's large and varied experience as an operator and clinical teacher, and is on that account prized deservedly high as an original work. The style is necessarily condensed, the descriptions of surgical diseases brief and to the point. The illustrations are well chosen, and the typical cases of the author's experience are full of interest, and are of more than ordinary value to the working surgeon.—*N. Y. Medical Record*, March 5, 1881.

It is a work especially adapted to the wants of students and practitioners. While not prolix, it affords instruction in sufficient detail for a full understanding of surgical principles and the treatment of surgical diseases. It embraces in its scope all the diseases that are recognized as belonging to surgery, and all traumatic injuries. In discussing these it has seemed to be the aim of the author rather to present the student with practical information, and that alone, than to burden his memory with the views of different writers, however distinguished they might have been. In this edition

the whole work has been carefully revised, much of it has been rewritten, important additions have been made to almost every chapter.—*Cincinnati Med. News*, Jan. 1881.

The English edition, from which this is printed, has been carefully revised and rewritten; almost every chapter has received additions, and nearly one hundred new cuts introduced. The labors of the American editor, Dr. John B. Roberts, have very much increased the value of the book. He has introduced many new illustrations and much new material not found in the English edition. He has written too with great conciseness, which is a rare virtue in an American editor of an English work. If one could procure or wished only one surgery, this volume would certainly be selected. If he desired two, Erichsen's Surgery would be added, and if he wished a third, Gross's Surgery would justly be the work selected. As the great work of Gross is amply sufficient for the wants of any surgeon, the priority given to Erichsen, and above all others, to this work of Bryant, is no labored eulogy of the last volume, but a simple and just statement of its demonstrable and pre-eminent merits.—*Am. Med. Bk-Weekly*, Feb. 26, 1881.

ERICHSEN (JOHN E.),*Professor of Surgery in University College, London, etc.*

THE SCIENCE AND ART OF SURGERY; being a Treatise on Surgical Injuries, Diseases and Operations. Carefully revised by the Author from the Seventh and enlarged English Edition. Illustrated by eight hundred and sixty-two engravings on wood. In two large and beautiful octavo volumes of nearly 2000 pages: cloth, \$8 50; leather, \$10 50; half Russia, \$11 50. (*Now Ready.*)

Of the many treatises on Surgery which it has been our task to study, or our pleasure to read, there is none which in all points has satisfied us so well as the classic treatise of Erichsen. His polished, clear style, his freedom from prejudice and hobbies, his unsurpassed grasp of his subject, and vast clinical experience, qualify him admirably to write a model text-book. When we wish, at the least cost of time, to learn the most of a topic in surgery, we turn, by preference, to his work. It is a pleasure, therefore, to see that the appreciation of it is general, and has led to the appearance of another edition.—*Med. and Surg. Reporter*, Feb. 2, 1878.

Notwithstanding the increase in size, we observe that much old matter has been omitted. The entire work has been thoroughly written up, and not merely amended by a few extra chapters. A great improvement has been made in the illustrations. One hundred and fifty new ones have been added, and many of the old ones have been redrawn. The author highly appreciates the favor with which his work has been received by American surgeons, and has endeavored to render his latest edition more than ever worthy of their approval. That he has succeeded admirably, must, we think, be the general opinion. We heartily recommend the book to both student and practitioner.—*N. Y. Med. Journal*, Feb. 1878.

The seventh edition is before the world as the last word of surgical science. There may be monographs which excel it upon certain points, but as a compact upon surgical principles and practice it is unrivalled. It will well reward practitioners to read it, for it has been a peculiar province of Mr. Erichsen to demonstrate the absolute interdependence of medical and surgical science. We need scarcely add, in conclusion, that we heartily commend the work to students that they may be grounded in a sound faith, and to practitioners as an invaluable guide at the bedside.—*Am. Practitioner*, April, 1878.

For the past twenty years Erichsen's Surgery has maintained its place as the leading text-book, not only in this country, but in Great Britain. That it is able to hold its ground, is abundantly proven by the thoroughness with which the present edition has been revised, and by the large amount of valuable material that has been added. Aside from this, one hundred and fifty new illustrations have been inserted, including quite a number of microscopical appearances of pathological processes. So marked is this change for the better, that the work almost appears as an entirely new one.—*Med. Record*, Feb. 23, 1878.

HOLMES (TIMOTHY), M.D.,*Surgeon to St. George's Hospital, London.*

SURGERY, ITS PRINCIPLES AND PRACTICE. In one handsome octavo volume of nearly 1000 pages, with 411 illustrations. Cloth, \$6; leather, \$7; half Russia, \$7 50.

This is a work which has been looked for on both sides of the Atlantic with much interest. Mr. Holmes is a surgeon of large and varied experience, and one of the best known, and perhaps the most brilliant writer upon surgical subjects in England. It is a book for students—and an admirable one—for the busy general practitioner. It will give a student all the knowledge needed to pass a rigid examination. The book fairly justifies the high expectations that were formed of it. Its style is clear and forcible, even brilliant at times, and the conciseness needed to bring it within its proper limits has not impaired

its force and distinctness.—*N. Y. Med. Record*, April 14, 1876.

It will be found a most excellent epitome of surgery by the general practitioner who has not the time to give attention to more minute and extended works, and to the medical student. In fact, we know of no one we can more cordially recommend. The author has succeeded well in giving a plain and practical account of each surgical injury and disease, and of the treatment which is most commonly advisable. It will no doubt become a popular work in the profession, and especially as a text-book.—*Cincinnati Med. News*, April, 1876.

WELLS (J. SOELBERG),*Professor of Ophthalmology in King's College Hospital, &c.*

A TREATISE ON DISEASES OF THE EYE. Third American, from the Third London Edition. Thoroughly revised, with copious additions, by Chas. S. Bull, M.D., Surgeon and Pathologist to the New York Eye and Ear Infirmary. Illustrated with about 250 engravings on wood, and six colored plates. Together with selections from the Test-types of Jaeger and Snellen. In one large and very handsome octavo volume of 900 pages. Cloth, \$5; leather, \$6; half Russia, raised bands, \$6 50. (Just Ready.)

The long-continued illness of the author, with its fatal termination, has kept this work for some time out of print, and has deprived it of the advantage of the revision which he sought to give it during the last years of his life. This edition has therefore been placed under the editorial supervision of Dr. Bull, who has labored earnestly to introduce in it all the advances which observation and experience have acquired for the theory and practice of ophthalmology since the appearance of the last revision. To accomplish this, considerable additions have been required, and the work is now presented in the confidence that it will fully deserve a continuance of the very marked favor with which it has hitherto been greeted as a complete, but concise, exposition of the principles and facts of its important department of medical science.

The additions made in the previous American editions by Dr. Hays have been retained, including the very full series of illustrations and the test-types of Jaeger and Snellen.

This new edition of Dr. Wells's great work on the eye will be welcomed by the profession at large as well as by the oculist. It contains much new matter relating to treatment and pathology, and is brought thoroughly up with the present status of ophthalmology. Its chapter on refraction and accommodation—a subject much discussed of late years, and of great importance—is exceedingly complete.—*Louisville Med. News*, Nov. 13, 1880.

The merits of Wells's treatise on diseases of the eye have been so universally acknowledged, and are so familiar to all who profess to have given any attention to ophthalmic surgery, that any discussion of them at this late day will be a work of supererogation. Very little that is practically useful in recent ophthalmic literature has escaped the editor, and the third American edition is well up to the times. As a text-book on ophthalmic surgery for the English-speaking practitioner, it is without a rival.—*Am. Journ. of Med. Sci.*, Jan. 1881.

The work has justly held a high place in English ophthalmic literature, and at the time of its first appearance was the best treatise of its kind in the lan-

guage. In the second edition, the author showed industrious research in adding new material from every quarter, and his spirit was eminently candid. A work thus built up by honest effort should not be suffered to die, and we are pleased to receive this third edition from the hands of Dr. Bull. His labor has been arduous, as the very great number of additions bracketed with his initial testify. Under the editorship which the third edition has enjoyed, the work is sure to sustain its good reputation, and to maintain its usefulness.—*N. Y. Med. Journ.*, Jan. 1881.

There is really no work which approaches it in adaptation to the wants of the general practitioner, while the most advanced specialist cannot rise from a perusal of its ample pages without having added to his knowledge. The American editor, Dr. Bull, won his spurs in ophthalmology some time back. His additions to the work of the lamented Wells are many, judicious, and timely, and in just so much have added to its value.—*Am. Practitioner*, Jan. 1881.

NETTLESHIP (EDWARD), F.R.C.S.,*Ophthalmic Surg. and Lect. on Ophth. Surg. at St. Thomas' Hospital, London.*

MANUAL OF OPHTHALMIC MEDICINE. In one royal 12mo. volume of over 350 pages, with 89 illustrations. Cloth, \$2. (Just Ready.)

The author is to be congratulated upon the very successful manner in which he has accomplished his task; he has succeeded in being concise without sacrificing clearness, and, including the whole ground covered by more voluminous text-books, has given an excellent résumé of all the practical

information they contain. We do not hesitate to pronounce Mr. Nettleship's book the best manual on ophthalmic surgery for the use of students and "busy practitioners" with which we are acquainted.—*Am. Jour. Med. Sciences*, April, 1880.

CARTER (R. BRUDENELL), F.R.C.S.,*Ophthalmic Surgeon to St. George's Hospital, &c.*

A PRACTICAL TREATISE ON DISEASES OF THE EYE. Edited, with test-types and Additions, by JOHN GREEN, M.D. (of St. Louis, Mo.). In one handsome octavo volume of about 500 pages, and 124 illustrations. Cloth, \$3 75.

It is with great pleasure that we can endorse the work as a most valuable contribution to practical ophthalmology. Mr. Carter never deviates from the end he has in view, and presents the subject in a clear and concise manner, easy of comprehension, and hence the more valuable. We would especially commend, however, as worthy of high praise, the manner in which the therapeutics of disease of the eye is elaborated, for here the author is particularly clear and practical, where other writers are unfortunately too often deficient. The final

chapter is devoted to a discussion of the uses and selection of spectacles, and is admirably compact, plain, and useful, especially the paragraphs on the treatment of presbyopia and myopia. In conclusion, our thanks are due the author for many useful hints in the great subject of ophthalmic surgery and therapeutics, a field where of late years we glean but a few grains of sound wheat from a mass of chaff.—*New York Medical Record*, Oct. 23, 1875.

BROWNE (EDGAR A.),*Surgeon to the Liverpool Eye and Ear Infirmary, and to the Dispensary for Skin Diseases.*

HOW TO USE THE OPHTHALMOSCOPE. Being Elementary Instructions in Ophthalmoscopy, arranged for the Use of Students. With thirty-five illustrations. In one small volume royal 12mo. of 120 pages: cloth, \$1.

LAURENCE'S HANDY-BOOK OF OPHTHALMIC SURGERY, for the use of Practitioners. Second edition, revised and enlarged. With numerous illustrations. In one very handsome octavo volume, cloth, \$2 75.

LAWSON'S INJURIES TO THE EYE, ORBIT, AND EYELIDS: their Immediate and Remote Effects. With about one hundred illustrations. In one very handsome octavo volume, cloth, \$3 50.

BURNETT (CHARLES H.), M.A., M.D.,*Aural Surg. to the Presb. Hosp., Surgeon-in-charge of the Infr. for Dis. of the Ear, Phila.***THE EAR, ITS ANATOMY, PHYSIOLOGY AND DISEASES.**

A Practical Treatise for the Use of Medical Students and Practitioners. In one handsome octavo volume of 615 pages, with eighty-seven illustrations: cloth, \$4 50; leather, \$5 50; half Russia, \$6 00. (*Lately Issued.*)

Foremost among the numerous recent contributions to aural literature, will be ranked this work of Dr. Burnett. It is impossible to do justice to this volume of over 600 pages in a necessarily brief notice. It must suffice to add that the book is profusely and accurately illustrated, while the references are conscientiously acknowledged, while the result has been to produce a treatise which will henceforth rank with the classic writings of Wilde and Von Tröltsch.—*The Lond. Practitioner*, May, 1879.

On account of the great advances which have been made of late years in otology, and of the increased interest manifested in it, the medical profession will welcome this new work, which presents clearly and concisely its present aspect, whilst clearly indicating the direction in which further researches can be most profitably carried on. Dr. Burnett from his own matured experience, and availing himself of

the observations and discoveries of others, has produced a work which, as a text-book, stands *facile princeps* in our language. We had marked several passages as well worthy of quotation and the attention of the general practitioner, but their number and the space at our command forbid. Perhaps it is better, as the book ought to be in the hands of every medical student, and its study will well repay the busy practitioner in the pleasure he will derive from the agreeable style in which many otherwise dry and mostly unknown subjects are treated. To the specialist the work is of the highest value, and his sense of gratitude to Dr. Burnett will, we hope, be proportionate to the amount of benefit he can obtain from the careful study of the book, and a constant reference to its trustworthy pages.—*Edinburgh Med. Jour.*, Aug. 1878.

TAYLOR (ALFRED S.), M.D.,*Lecturer on Med. Jurisp. and Chemistry in Guy's Hospital.***A MANUAL OF MEDICAL JURISPRUDENCE.** Eighth American edition. Thoroughly revised and rewritten. Edited by JOHN J. REESE, M.D., Prof. of Med. Jurisp. and Toxicology in the Univ. of Penn.

In one large octavo volume of 933 pages, with 70 illustrations. Cloth, \$5; leather, \$6; half Russia, raised bands, \$6 50. (*Just Ready.*)

The American editions of this standard manual have for a long time laid claim to the attention of the profession in this country; and that the profession has recognized this claim with favor is proven by the call for frequent new editions of the work. This one, the eighth, comes before us as embodying the latest thoughts and emendations of Dr. Taylor, upon the subject to which he devoted his life, with an assiduity and success which made him *facile princeps* among English writers on medical jurisprudence. Both the author and the book have made a mark too deep to be affected by criticism, whether it be censure or praise. In this case, however, we should only have to seek for laudatory terms.—*Am. Journ. of Med. Sci.*, Jan. 1881.

It is not very often that a medical book reaches its tenth edition, or that the last earthly labor is performed by the author in retouching the work that first came from his hand thirty-five years before. All this, however, has happened in the case of Dr. Taylor and his classical treatise. The pen dropped from the grasp only when the shadows of old age were rapidly deepening into the darkness of death. Under the circumstances, all the journalist has to do

is to announce, not criticize the completed task. The value of the gem is too well known to require more than the telling that the master-hand has rebrillianted its facets and polished its angles before leaving it as his legacy to his brethren in the profession.—*Phila. Med. Times*, Dec. 4, 1880.

It will suffice to remark that this new edition shows the signs of judicious revision. A great number of illustrative medico-legal cases which have occurred since the last edition was published are cited in their proper connection, and add much to the interest and value of the work; they comprise the bulk of the additions to the text. As an indication of the freshness of the work, we notice numerous references to medico-legal experience that has transpired during the year just ended; among these is a comment by the American editor upon that midsummer madness, the Tanner fasting exploit of last August. In these features and in others there is ample evidence that this admirable book will maintain its high place as a standard authority concerning the matters of which it treats.—*Boston Med. and Surg. Journal*, Jan. 13, 1881.

BY THE SAME AUTHOR.**THE PRINCIPLES AND PRACTICE OF MEDICAL JURISPRUDENCE.**

Second Edition, Revised, with numerous Illustrations. In two large octavo volumes, cloth, \$10 00; leather, \$12 00.

This great work is now recognized in England as the fullest and most authoritative treatise on every department of its important subject. In laying it, in its improved form, before the American profession, the publishers trust that it will assume the same position in this country.

BY THE SAME AUTHOR.**POISONS IN RELATION TO MEDICAL JURISPRUDENCE AND**

MEDICINE. Third American, from the Third and Revised English Edition. In one large octavo volume of 850 pages; cloth, \$5 50; leather, \$6 50.

The present is based upon the two previous editions; "but the complete revision rendered necessary by time has converted it into a new work." This statement from the preface contains all that it is desired to know in reference to the new edition. The works of this author are already in the library of every physician who is liable to be called upon for medico-legal testimony (and what one is not), so that all that is required to be known about the present book is that the author has kept it abreast with the times. What makes it now, as always, especially valuable to the practitioner is its conciseness and practical character, only those poisonous substances

being described which give rise to legal investigations.—*The Clinic*, Nov. 6, 1876.

Dr. Taylor has brought to bear on the compilation of this volume, stores of learning, experience, and practical acquaintance with his subject, probably far beyond what any other living authority on toxicology could have amassed or utilized. He has fully sustained his reputation by the consummate skill and legal acumen he has displayed in the arrangement of the subject-matter, and the result is a work on Poisons which will be indispensable to every student or practitioner in law and medicine.—*The Dublin Journ. of Med. Sci.*, Oct. 1876.

ROBERTS (WILLIAM), M.D.,
Lecturer on Medicine in the Manchester School of Medicine, etc.

A PRACTICAL TREATISE ON URINARY AND RENAL DISEASES, including Urinary Deposits. Illustrated by numerous cases and engravings. Third American, from the Third Revised and Enlarged London Edition. In one large and handsome octavo volume of over 600 pages. Cloth, \$4. (*Just Ready.*)

THOMPSON (SIR HENRY),
Surgeon and Professor of Clinical Surgery to University College Hospital.

LECTURES ON DISEASES OF THE URINARY ORGANS. With illustrations on wood. Second American from the Third English Edition. In one neat octavo volume. Cloth, \$2 25.

BY THE SAME AUTHOR.

ON THE PATHOLOGY AND TREATMENT OF STRICTURE OF THE URETHRA AND URINARY FISTULÆ. With plates and wood-cuts. From the third and revised English edition. In one very handsome octavo volume, cloth, \$3 50.

TUKE (DANIEL HACK), M.D.,
Joint author of *The Manual of Psychological Medicine*, &c.

ILLUSTRATIONS OF THE INFLUENCE OF THE MIND UPON THE BODY IN HEALTH AND DISEASE. Designed to illustrate the Action of the Imagination. In one handsome octavo volume of 416 pages, cloth, \$3 25.

BLANDFORD (G. FIELDING), M.D., F.R.C.P.,
Lecturer on Psychological Medicine at the School of St. George's Hospital, &c.

INSANITY AND ITS TREATMENT: Lectures on the Treatment, Medical and Legal, of Insane Patients. With a Summary of the Laws in force in the United States on the Confinement of the Insane. By ISAAC RAY, M. D. In one very handsome octavo volume of 471 pages; cloth, \$3 25.

It satisfies a want which must have been sorely felt by the busy general practitioners of this country. It takes the form of a manual of clinical description of the various forms of insanity, with a description of the mode of examining persons suspected of insanity. We call particular attention to this feature of the book, as giving it a unique value to the general practitioner. If we pass from theoretical considerations to descriptions of the varieties of insanity as

actually seen in practice and the appropriate treatment for them, we find in Dr. Blandford's work a considerable advance over previous writings on the subject. His pictures of the various forms of mental disease are so clear and good that no reader can fail to be struck with their superiority to those given in ordinary manuals in the English language or (so far as our own reading extends) in any other.—*London Practitioner*, Feb. 1871.

LEA (HENRY C.).

SUPERSTITION AND FORCE: ESSAYS ON THE WAGER OF LAW, THE WAGER OF BATTLE, THE ORDEAL AND TORTURE. Third Revised and Enlarged Edition. In one handsome royal 12mo. volume of 552 pages. Cloth, \$2 50. (*Just Ready.*)

This valuable work is in reality a history of civilization as interpreted by the progress of jurisprudence. . . . In "Superstition and Force" we have a philosophic survey of the long period intervening between primitive barbarity and civilized enlightenment. There is not a chapter in the work that should not be most carefully studied, and however well versed the reader may be in the science of jurisprudence, he will find much in Mr. Lea's volume of which he was previously ignorant. The book is a valuable addition to the literature of social science.—*Westminster Review*, Jan. 1880.

The appearance of a new edition of Mr. Henry C. Lea's "Superstition and Force" is a sign that our highest scholarship is not without honor in its native country. Mr. Lea has met every fresh demand for his work with a careful revision of it, and the present edition is not only fuller and, if possible,

more accurate than either of the preceding, but, from the thorough elaboration, is more like a harmonious concert and less like a batch of studies.—*The Nation*, Aug. 1, 1878.

Many will be tempted to say that this, like the "Decline and Fall," is one of the unrefractable books. Its facts are innumerable, its deductions simple and inevitable, and its *chevaux-de-frise* of references bristling and dense enough to make the keenest, stoutest, and best equipped assailant think twice before advancing. Nor is there anything controversial in it to provoke assault. The author is no polemic. Though he obviously feels and thinks strongly, he succeeds in attaining impartiality. Whether looked on as a picture or a mirror, a work such as this has a lasting value.—*Lippincott's Magazine*, Oct. 1878.

BY THE SAME AUTHOR.

STUDIES IN CHURCH HISTORY. THE RISE OF THE TEMPORAL POWER—BENEFIT OF CLERGY—EXCOMMUNICATION. In one large royal 12mo. volume of 516 pp.; cloth, \$2 75. (*Lately Published.*)

The story was never told more calmly or with greater learning or wisest thought. We doubt, indeed, if any other study of this field can be compared with this for clearness, accuracy, and power.—*Chicago Examiner*, Dec. 1870.

Mr. Lea's latest work, "Studies in Church History," fully sustains the promise of the first. It deals with three subjects—the Temporal Power, Benefit of Clergy, and Excommunication, the record of which

has a peculiar importance for the English student, and is a chapter on Ancient Law likely to be regarded as final. We can hardly pass from our mention of such works as these—with which that on "Sacerdotal Celibacy" should be included—without noting the literary phenomenon that the head of one of the first American houses is also the writer of some of its most original books.—*London Athenæum*, Jan. 7, 1871.

INDEX TO CATALOGUE.

| | PAGE | | PAGE |
|---|------|---|------|
| American Journal of the Medical Sciences | 1 | Holland's Medical Notes and Reflections | 14 |
| Allen's Anatomy | 7 | *Holmes' System of Surgery | 27 |
| Anatomical Atlas, by Smith and Horner | 7 | *Holmes's Surgery | 28 |
| Ashton on the Rectum and Anus | 26 | Holden's Landmarks | 6 |
| Attfeld's Chemistry | 9 | Horner's Anatomy and Histology | 7 |
| Ashwell on Diseases of Females | 21 | Hudson on Fever | 20 |
| *Ashhurst's Surgery | 25 | Hill on Venereal Diseases | 20 |
| Browne on Ophthalmoscopes | 29 | Hillier's Handbook of Skin Diseases | 19 |
| Browne on the Throat | 19 | Jones (C. Handfield) on Nervous Disorders | 19 |
| *Burnett on the Ear | 30 | Knapp's Chemical Technology | 10 |
| *Barnes on Diseases of Women | 22 | Keating on Infants | 21 |
| Barnes' Midwifery | 24 | Lea's Superstition and Force | 31 |
| Ballamy's Surgical Anatomy | 7 | Lea's Studies in Church History | 31 |
| *Bryant's Practice of Surgery | 28 | Lee on Syphilis | 20 |
| Bloxam's Chemistry | 10 | *Leishman's Midwifery | 24 |
| Blandford on Insanity | 31 | La Roche on Yellow Fever | 14 |
| Basham on Menal Diseases | 20 | La Roche on Pneumonia, &c. | 20 |
| Bartholow on Electricity | 18 | Laurence and Moon's Ophthalmic Surgery | 29 |
| Barlow's Practice of Medicine | 14 | Lawson on the Eye | 29 |
| Bowman's (John E.) Practical Chemistry | 9 | Lehmann's Physiological Chemistry, 2 vols. | 8 |
| *Bristowe's Practice | 14 | Lehmann's Chemical Physiology | 8 |
| *Bumstead on Venereal | 20 | Ludlow's Manual of Examinations | 5 |
| Bumstead and Cullerier's Atlas of Venereal | 20 | Lyons on Fever | 20 |
| *Carpenter's Human Physiology | 8 | Malsch's Materia Medica | 13 |
| Carpenter on the Use and Abuse of Alcohol | 11 | Mitchell's Nervous Diseases of Women | 16 |
| *Cornill and Ranvier | 13 | Medical News and Abstract | 2 |
| Carter on the Eye | 29 | Morris on Skin Diseases | 19 |
| Cleland's Dissector | 7 | Meigs on Puerperal Fever | 21 |
| Classen's Chemistry | 9 | Miller's Practice of Surgery | 25 |
| Clowes' Chemistry | 10 | Miller's Principles of Surgery | 25 |
| Coleman's Dental Surgery | 26 | Montgomery on Pregnancy | 21 |
| Century of American Medicine | 5 | Nettleship's Ophthalmic Medicine | 29 |
| Chadwick on Diseases of Women | 24 | Neill and Smith's Compendium of Med. Science | 6 |
| Chambers on Diet and Regimen | 20 | Parvis's Midwifery | 24 |
| Christison and Griffith's Dispensatory | 11 | Parry on Extra-Uterine Pregnancy | 23 |
| Churchehill on Puerperal Fever | 21 | Pavy on Digestion | 14 |
| Coadie on Diseases of Children | 20 | *Parrish's Practical Pharmacy | 11 |
| Cooper's (B. B.) Lectures on Surgery | 25 | Pirrie's System of Surgery | 25 |
| Cullerier's Atlas of Venereal Diseases | 20 | *Playfair's Midwifery | 24 |
| Duncan on Diseases of Women | 23 | Quain and Sharpey's Anatomy, by Leidy | 7 |
| *Dalton's Human Physiology | 8 | *Reynolds' System of Medicine | 17 |
| Davis's Clinical Lectures | 16 | Richardson's Preventive Medicine | 16 |
| Dawson on Diseases of Females | 21 | Roberts on Urinary Diseases | 31 |
| Druitt's Modern Surgery | 26 | Ramsbotham on Parturition | 25 |
| *Dunglison's Medical Dictionary | 4 | Ramsen's Principles of Chemistry | 9 |
| Edis on Diseases of Women | 22 | Rigby's Midwifery | 21 |
| Ellis's Demonstrations in Anatomy | 7 | Rodwell's Dictionary of Science | 4 |
| *Erichsen's System of Surgery | 25 | Salmson's Operative Surgery | 25 |
| *Emmet on Diseases of Women | 23 | Swayne's Obstetric Aphorisms | 21 |
| Farquharson's Therapeutics | 11 | Seller on the Throat | 19 |
| Foster's Physiology | 8 | Sargent's Minor Surgery | 28 |
| Fenwick's Diagnosis | 14 | Sharpey and Quain's Anatomy, by Leidy | 7 |
| Finlayson's Clinical Diagnosis | 16 | Skey's Operative Surgery | 25 |
| Flint on Respiratory Organs | 19 | Slade on Diphtheria | 16 |
| Flint on the Heart | 19 | Schäfer's Histology | 7 |
| *Flint's Practice of Medicine | 15 | *Smith (J. L.) on Children | 21 |
| Flint's Essays | 15 | Smith (H. H.) and Horner's Anatomical Atlas | 7 |
| *Flint's Clinical Medicine | 15 | Smith (Edward) on Consumption | 16 |
| Flint on Phthisis | 19 | Smith (Eust.) on Wasting Diseases in Children | 20 |
| Flint on Percussion | 19 | *Stillé's Therapeutics | 13 |
| *Fothergill's Handbook of Treatment | 16 | *Stillé & Malsch's Dispensatory | 12 |
| Fowles's Elementary Chemistry | 10 | Sturges on Clinical Medicine | 15 |
| Fox on Diseases of the Skin | 19 | Stokes on Fever | 14 |
| Fuller on the Lungs, &c. | 16 | Tanner's Manual of Clinical Medicine | 5 |
| Green's Pathology and Morbid Anatomy | 14 | Tanner on Pregnancy | 23 |
| Greene's Medical Chemistry | 9 | *Taylor's Medical Jurisprudence | 30 |
| Gibson's Surgery | 25 | Taylor's Principles and Practice of Med. Jurisp | 30 |
| Ginge's Pathological Histology, by Leidy | 14 | Taylor on Poisons | 30 |
| *Gray's Anatomy | 6 | Tuke on the Influence of the Mind | 31 |
| Galloway's Analysis | 9 | *Thomas on Diseases of Females | 22 |
| Gulfeith's (R. E.) Universal Formulary | 11 | Thompson on Urinary Organs | 31 |
| Gross on Sterility | 20 | Thompson on Stricture | 31 |
| Gross on Urinary Organs | 26 | Todd on Acute Diseases | 14 |
| Gross on Foreign Bodies in Air-Passages | 26 | Woodbury's Practice | 16 |
| *Gross's System of Surgery | 26 | Walsh on the Heart | 16 |
| Habershon on the Abdomen | 14 | Watson's Practice of Physic | 16 |
| *Hamilton on Dislocations and Fractures | 23 | *Wells on the Eye | 29 |
| Hartshorne's Essentials of Medicine | 16 | West on Diseases of Females | 21 |
| Hartshorne's Synopsis of the Medical Sciences | 6 | West on Diseases of Children | 21 |
| Hartshorne's Anatomy and Physiology | 7 | West on Nervous Disorders of Children | 21 |
| Hamilton on Nervous Diseases | 18 | Williams on Consumption | 16 |
| Hoffman's Chemical Analysis | 11 | Wilson's Human Anatomy | 7 |
| Hearth's Practical Anatomy | 6 | Wilson's Handbook of Cutaneous Medicine | 26 |
| Hoblyn's Medical Dictionary | 4 | Wohler's Organic Chemistry | 9 |
| Hodge on Women | 23 | Winckel on Childbed | 24 |
| Hodge's Obstetrics | 24 | | |

Books marked * are also bound in half Russia.

HENRY C. LEA'S SON & CO.—Philadelphia.

